Medical Library

The Health Magazine of the American Medical Association

OCT 20 1941

HYGEIA

ARMY ATHLETICS see page 876

NOVEMBER • 1941 • 25c

Meat . . .

and the Nutritive Needs of Your Family

EVERY mother desires to see her family in "buoyant positive health." But not every mother realizes the influence which the meals she serves her family will have in this regard.

The food essentials required by the body—proteins, vitamins, and minerals—are readily available in generous amounts in many common foods. But as no one food contains all of them, it is necessary to organize meals wisely, so that all food essentials may be provided.

For the proteins needed, meat is one of the richest sources. Its proteins are of high quality, readily converted to the body's needs and promptly utilized by it. Without adequate amounts of such high quality proteins health becomes impaired and growth is hampered.

All meats are important natural sources of thiamine (vitamin B_1), riboflavin (vitamin G or B_2), and nicotinic acid (a vitamin needed for the prevention of pellagra); liver, in addition, is also an excellent source of vitamin A.

Of the minerals required by the body for continued well-being, meat provides three important ones in goodly amounts—iron, copper, and phosphorus.

Because of the wealth of essential nutrients it contains, meat deserves an important place in the meals you plan for your family.

ACCEPTED AMERICAN MEDICAL ASSN Council on Foods

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

CHICAGO

BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

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FORECAST

You're watching the kids play ball, and all of a sudden you notice this youngster in right field with a steel brace on his leg, so you wait for his turn at bat. He drags his stiff leg awkwardly as he comes up, and your throat aches all the way back to your eyes as he taps home plate with his bat, taunting the pitcher to "just put one over, right about here!" After a couple of wild swings, he rolls one out into the infield. They throw him out by a mile and the kids all holler. It makes your blood boil. "If that were my kid," you say to yourself, "I'd . . ."

But just read "Braces at Bat" by R. M. Cunningham Jr. in the December issue.

War itself is not the cause of neurotic and psychopathic personalities. But, like any other crisis, it tends to bring these manifestations of emotional instability to the surface. Throughout the population emotions become more mercurial, more sensitive and responsive to environmental factors. The timid and the cautious tend to become more so; the bold and courageous usually find emotional outlets in venturesome activities.

Next month Douglas A. Thom, M.D., discusses "Civilian and Family Morale in War."

A mile from the old Palace where Hawaiian kings once dwelt, in the midst of a congested area lies the Palama settlement, a group of twelve white, colonial buildings, surrounded by flowering shrubs and towering monkey-pod and eucalyptus trees.

Here, medical care, dental service, nursing, recreation and a community camp provide the facilities which serve Palama's public of some forty thousand people.

In "Honolulu's Hull House," Philip S. Platt tells how our Pacific outpost is guarded by Palama settlement, a unique health and social welfare institution.

To the American child Christmas is synonomous with Santa Claus. That this Patron Saint of childhood is responsible for family inconveniences is difficult to believe. Yet problems arise from even this saintly source. Not serious problems, to be sure, but the type that often produce unnecessary domestic annoyances.

Herman M. Jahr, M.D., maintains "There is a Santa Claus."

In the United States scientific meat inspection did not prevail until it was placed under the jurisdiction and made a function of the Bureau of Animal Industry of the Department of Agriculture, although some form of inspection was previously carried out under local authority by a few municipalities.

William H. Lipman, M.D., reviews the history of meat inspection in the United States.

HYGEIA

THE HEALTH MAGAZINE

535 N. DEARBORN ST., CHICAGO, ILL.

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Unsolicited manuscripts will be considered by the Editor but must be accompanied by a stamped self addressed envelop to insure return if rejected. Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy submitted. All rights reserved.

help your baby build a well-shaped head

Don't depend on sunshine, alone, to provide the Vitamin D your baby needs to utilize the calcium and phosphorus in his food for the proper development of bone. Bad weather, clouds, smoke, may prevent your child from getting enough. To help him build a well-shaped head, give Squibb Cod Liver Oil daily!

sound even teeth

You wait eagerly for those first teeth to appear! How important that they develop soundly. To help your baby utilize the calcium and phosphorus in his food for the development of sound teeth, give plenty of Vitamin D. Start him on Squibb Cod Liver Oil a few weeks after birth.

how straight he sits!

This baby's back is growing straight and strong, his chest is full and deep...because his bones are developing right! Give *your* baby the same chance. To build sound bones and teeth, he needs the help of Vitamin D. Make sure he gets it. Give Squibb Cod Liver Oil *daily*.

This seal...a guide to extra vitamins....When you buy cod liver oil, get your money's worth in *vitamins*. That's what benefits your baby. Millions of mothers for years past have preferred *Squibb's* because the vitamin content is assured. Each teaspoonful supplies *twice* as many Vitamins A and D as cod liver oil which meets the minimum requirements of the U.S. Pharmacopeia. Look for the Squibb seal. Buy Squibb Cod Liver Oil at any drug store....*The priceless ingredient of every product is the honor and integrity of its maker*

SQUIBB COD LIVER OIL

"The Adcomber"

looks at Hygeia ads

In the hollow of your hand, Mrs. Homemaker!—that's where you hold your family in the matter of food intake. But do you actually know *the reasons* why this intake should include plenty of meat? You'll find them in black and white inside the front cover.

Remember the story about the cracked china plate copied identically in the Queen's dinner set? That potter could never work for American women! They want something better . . . something different—new conveniences like Tampax. So they've adopted Tampax—to the tune of 230,000,000!! (page 929)!!

Not all glamour—this doctoring business. Even less so—the exacting routine and sacrifices required in *learning to be a doctor.* But those hard years built the foundation you depend upon today. Reason enough why you can turn to him with confidence . . . (Page 921.)

The "true juice of sun-ripened Hawaiian pineapples"! What a delectable thought for people who like their vitamins tasty. And when you note the vitamin content of a single 6-ounce glass of this delicious juice — (page 915) — what a HELPFUL THOUGHT for mothers!

For baby's sake!—keep the breast sweet and wholesome and reduce the danger of infection. Modern Mother Nursing Brassiere is made to do all these things . . . a precaution, too, against sagging breasts and an aging figure. Three styles for "modern mothers" described on page 922.

THE REPORTER INQUIRES
The Question: How do you start the day "on top of the world"?
Where asked: Page 917, this issue.
The Answer: Mr. Busy-Man, a Live Wire: "With a shower and my bowl of Post's 40% Bran Flakes."
. . . .Ever try that combination. . . .?

Do you know *your best ally against cancer?* The one stronger even than x-ray, radium or modern surgery? It is *yours* to use at will. Some helpful suggestions about *how* to use it on page 908.

"What is menstruation?" "Why is regularity important?"—urgent questions requiring accurate answers for today's young girls! Two scientifically correct booklets—for two age-groups—will be sent to educators. Just use the coupon on page 925. Anatomy charts and teaching outline also. ENTIRELY FREE.

Here's a tempting opportunity to get yourself 12 good-looking Christmas greetings for a dime . . . to be admired while you lay away liberal portions of that golden-toasted Frank's Jumbo Peanut Butter. Important details on page 914.

Something new for the baby! Baby can "play safe" with Tykie Toys because they're colorfast, easily washed, non-inflammable—and he'll love them because they're colorful, tasteless, gem-like. A popular gift—and a SAFE one. Page 935.

THE ADCOMBER

LETTERS FROM *Readers*

Conquerors of Yellow Fever

To the Editor:

In the current issue of HYGEIA you featured a picture entitled, "Conquerors of Yellow Fever." This is a third in a series of such pictures.

I am interested in finding out when the two previous pictures of this type were published. Would it be possible for you to furnish me with the date of their publication and also the number to be printed in the future?

This one of the October issue is such a lovely thing that I intend to mount it for use in our science library. I've looked in all our back issues for the other two but so far my search has been in vain.

Any help you may give me will certainly be appreciated.

MRS. MILDRED ROSS,
Science Librarian, George Washington High School
Indianapolis, Ind.

The John Wyeth Company, 1600 Arch St., Philadelphia, Pa., has reproduced the other two paintings by Dean Cornwell.—ED.

Insulin Crutches

To the Editor:

As a public health nurse and health teacher, I enjoy every inch of your fine magazine and use many articles and reports in my work. Needless to say, I look forward to each issue.

May we have more articles like "Insulin Crutches" in the May issue, written by Mrs. Mable Kinkade Stabler? Having had charge of the diabetic kitchen of a large Chicago hospital before the days of insulin, I appreciate more than ever the new hope she gives to diabetics. Her article is written in such an interesting manner that even students not primarily interested in diabetes read it eagerly, thereby getting much more factual material than they would from a text. I shall be looking for more articles from her pen.

Thank you for all the help you give to health education teachers everywhere.

MRS. MARGARET D. BEACH
Indianapolis, Ind.

Orders Additional Subscriptions

To the Editor:

HYGEIA has always been an inspiration to me and I believe that others can profit by having it in their homes. For that reason, I am ordering three additional subscriptions—one to be sent to a young mother, one to a trained nurse who is employed as a Baptist missionary, and the last to a distinguished Baptist minister.

C. BARRINGER SMITH.
Richmond, Va.

Before the Next One Comes

To the Editor:

Your last year's issues, in my opinion, have been exceptionally good. We find HYGEIA one of the popular magazines in the waiting room, but it invariably leaves the office before the next copy arrives.

VILATE RAILE.
Salt Lake City, Utah

To the Editor:

I've had HYGEIA in my waiting room for years. At least 50 per cent of the copies are carried out because an article is not finished. I don't get a chance to read them myself.

T. H. GILLAND, M.D.
Greencastle, Pa.

Index

To the Editor:

Will you please send me a copy of the 1940 HYGEIA index?

There is no other magazine coming to our home that we enjoy more. Since we keep back copies for reference, an index will be extremely useful. Just this evening

You . . . the Mirror of their World

Today, yours are the eyes that guide them through the magic of the Story Hour. In great measure, yours are the eyes that must explain and interpret their entire world. But to grow to manhood, they must depend more and more and more upon themselves with every passing day. Give them the advantage of clear, accurate vision. Make regular eye examination a major part of their health routine. Because only through scientific examination can you determine whether a child's eyes are functioning properly. Caught at an early stage, defects which might later cause serious trouble can be corrected. This much you owe them, that they may not be handicapped through life.

Soft-Lite Lenses are made by Bausch & Lomb for the Soft-Lite Lens Co., Inc. New York, Toronto, London.

Where absorptive lenses are needed, Soft-Lite Lenses are often prescribed for children as well as for adults to provide protection against glare and over-brightness. Delicately flesh-toned, they are inconspicuous.

Not with a pretty party domino, to be lightly lifted off when the right partner comes along! Masked instead behind an impersonal shell of pasty makeup—thickly spread to conceal the coarsening pores and skin irritations so often caused by hit-or-miss cosmetics.

Good cosmetics—among them Marcelle "hypo-allergenic" preparations (free of known irritants)—are helping charm-wise women everywhere to rip off ugly, impersonal masks.

Marcelle Cosmetics are known to doctors and their patients the country over...advertised in medical journals..formulas supplied to doctors... not a single secret—*for every ingredient is selected to help keep delicate complexions "in the pink"!*

Try these wholesome Marcelle Cosmetics. A week's supply of five daily necessities for ten cents—the cost of postage. Mail the coupon with a dime for your sample set of: Marcelle hypo-allergenic Cleansing Cream, Skin Lubricating Cream, Face Powder, Rouge and Lipstick.

HURRY! HURRY! Shed the old mask...

Marcelle hypo-allergenic COSMETICS

1741 N. Western Ave., Chicago, Ill.

Please send me the five sample beauty aids. I enclose 10c.

Blonde..... Brunette..... Auburn.....

NAME.....

ADDRESS.....

CITY..... ....STATE .....

I looked up an article in last November's issue for a neighbor.

W. L. LESLIE

West Palm Beach, Fla.

Beckey, Wortis and Levin

To the Editor:

The article by Ruth E. Beckey, "The Children's Speech Clinic," should be of great interest to parents.

I wish also to commend you on the very fine article, "In Search of a Normal Life," in the April HYGEIA.

Many of the articles are really "meaty" reading. "Health Tips on Your Trip" in the June HYGEIA gives splendid information concerning health.

MARY J. KADEL

Terre Haute, Ind.

We Trust So, Too

To the Editor:

Your magazine and your treatment of me as a subscriber are sincerely appreciated, and I trust I shall continue to take your HYGEIA for many months to come.

MRS. ROBERT H. HORNER

West Newton, Mass.

Athlete's Foot

To the Editor:

The article, "Athlete's Foot," by Drs. Baer and Sulzberger is not very clear. We are told on page 579, paragraph 3, that the transmission of the active stages is rare.

On page 580, paragraph 5 (second col.) we are told to avoid physical contact with those infected (to use separate bathrooms) even though most of us have the disease lying dormant. Also, we are told that preventive measures are unnecessary around swimming pools. To me the article is not very definite. Perhaps it is clear to you.

DR. H. C. SPENCER

Doctors Baer and Sulzberger precede the measures outlined in the second column, page 580, paragraph 5, by saying: "Since most adults are already infected, the use of measures 'to prevent spread of the infection in clubs, schools, locker rooms and around swimming pools are usually unnecessary, provided these simple procedures are carefully followed. However, the following types of precautions are still being recommended by many specialists."

In other words, Drs. Baer and Sulzberger take the point of view that it is unnecessary to use measures to prevent the spread of the infection, but since there are quite a few specialists who still prescribe the precautions outlined in column 2, page 580, they felt that although they did not share this point of view, they should nevertheless give HYGEIA *readers an opportunity to become acquainted with that group of specialists' point of view.*—ED.

She Doesn't Like Our Covers

To the Editor:

I am moved to protest because a magazine whose contents are so good should have such repulsive covers that I feel I must hustle it out of sight as soon as it comes. B. O., athlete's foot, etc. on the front cover would affront the good taste of a pig! HYGEIA deserves better clothes.

ROSELLE W. HUDDILSTON,
past president,
Maine Federation of
Women's Clubs.

Orono, Maine

This is a realistic world and athlete's foot is one of the most widespread conditions affecting American people today. HYGEIA *is essentially a health magazine. We have had most favorable comment on the manner in which we called attention to the fact that we were publishing the first authentic article for the public on athlete's foot.*

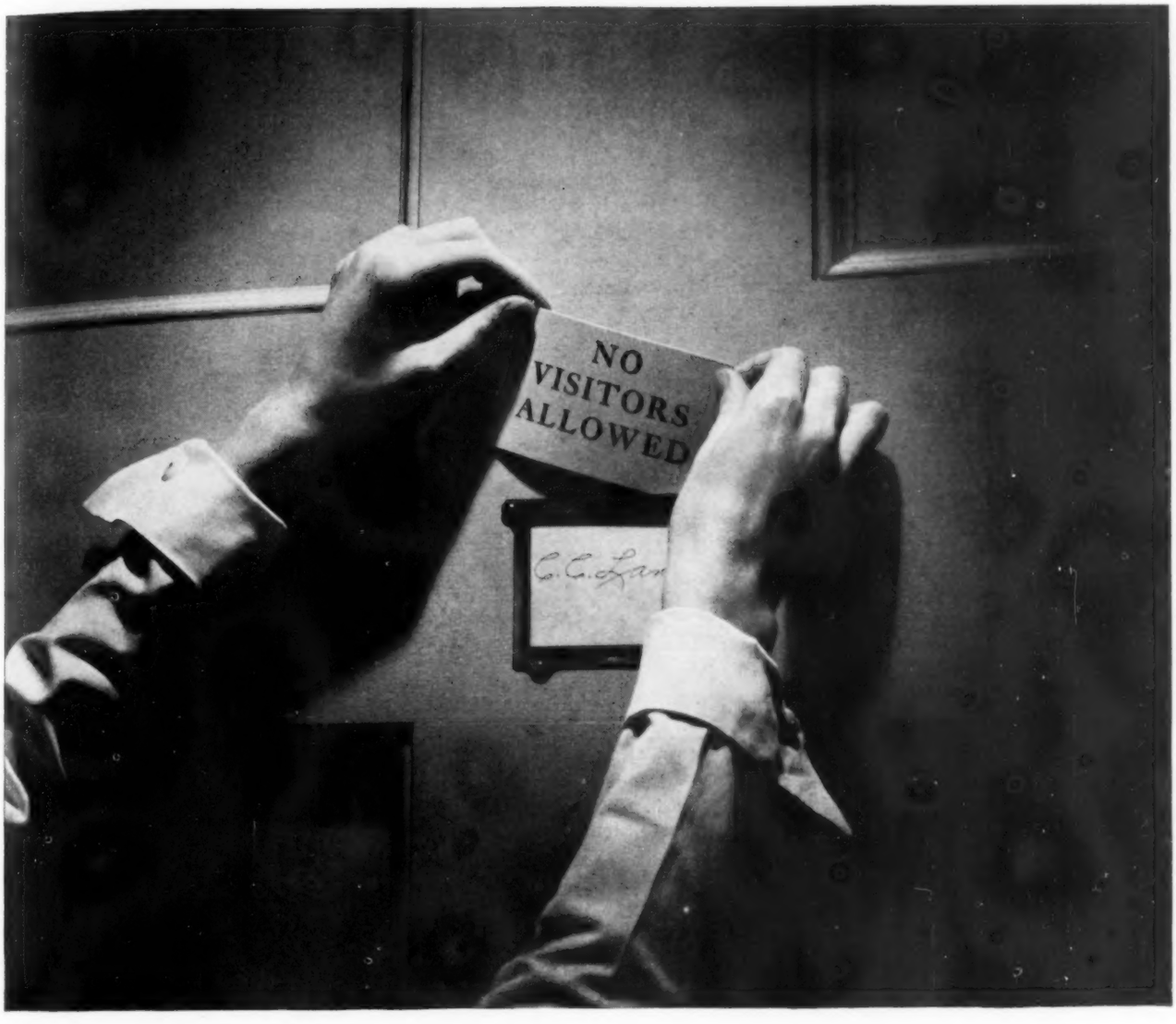
—ED.

Nutrition for Defense

To the Editor:

It has been my observation that clerks in the so-called health food stores give medical advice to sell their products.

Nutritional education for national defense needs to be brought about through instituting a popular vogue. A people with ingrained eating habits of many years standing cannot be changed at command in a democracy. They need to be ballyhooed into taking up "balanced diet" in the form of a pastime as I have it planned—the basic principle having the approval of physi-



The man who nearly died... from a few kind words

BEYOND THAT DOOR lies a very sick man. True, his doctor says he is going to pull through. But he has come mighty close to paying a tragic price for a few words of free advice from a well-meaning friend.

When he complained of a nagging pain in his abdomen, his friend said: "You've probably eaten something that's poisoned you. Here's what *I'd* do..."

So he promptly followed his friend's suggestion and took a cathartic. And in a matter of hours he was being rushed by ambulance to the hospital . . . with a ruptured appendix.

His friend, of course, had acted from the kindest of motives. But he didn't know that an abdominal pain might mean acute appendicitis, in which case a cathartic should never be taken.

Unfortunately, appendicitis is only one of many illnesses where amateur medical advice can result in tragedy. Yet, human nature being what it is, many people just can't resist the temptation to offer advice when a friend is sick.

Intelligent medical treatment depends upon various factors which only a physician is qualified to evaluate. When something seems wrong with you, it is the part of wisdom to observe this common-sense rule: Take a friend's advice about buying a radio, a car, or even a home if you wish; but don't let him advise you about your health.

Don't let a friend who *means* well tell you how to *get* well. To get well, and *keep* well, the man to see is your physician.

Copyright, 1941, Parke, Davis & Co.

PARKE, DAVIS & COMPANY

Detroit, Michigan

Seventy-five years of service to medicine and pharmacy

SEE YOUR DOCTOR

Break this strike, Mother—use this thermometer

3 TIMES EASIER TO READ

ALL the youngster wants is *exact* information about his fever situation. He knows guessing is as out of date as button shoes. A Taylor BINOC is so easy to read that he can read his fever for himself. You can read a Taylor BINOC as easily as newspaper type. The BINOC is flat—there's only one side you can read. The mercury column is clearer—more distinct than the three-sided type. There's a Taylor BINOC for $1.50; a Tycos BINOC for $2.00—oral or rectal type. Send us your check or money order direct if your druggist can't supply you. Taylor Instrument Companies, Rochester, N.Y., and Toronto, Canada.

These thermometers are certified for use in all states requiring special seals

Taylor
FEVER THERMOMETERS

HEALTH PLAYS

Reprinted from HYGEIA

Exit the Monster.—15 characters; time, 20 minutes. Set of 15 copies, 75 cents. Single copies, 10 cents each.

The School Lunch Room.—11 to 20 characters; time, 15 minutes. Set of 10 copies, 45 cents. Single copy, 10 cents.

The Medicine Men.—A puppet play. 7 characters; time, 10 minutes. Set of 7 copies, 30 cents. Single copy, 5 cents.

Sissy.—4 characters; time, 30 minutes. Set of 4 copies, 25 cents. Single copy, 10 cents.

The Gift a King Accepts.—15 characters. Set of 15 copies, $1.10. Single copies, 10 cents each.

The Magic Fluid (Diphtheria Antitoxin).—8 characters, with chorus, "king's subjects," etc. Set of 8 copies, 35 cents. Single copies, 10 cents each.

Send for free catalog describing other health material

American Medical Ass'n, 535 N. Dearborn, Chicago

cian, dietitian and biochemist. Authentic documents will be shown on request.

The exploitation of a gullible public is the result of repetitious ballyhoo since the public is led to think in terms of sickness and disease instead of in terms of normal health. One may well ask what did the people do generations ago when vitamins were unheard of. They did the same thing then as is now being done with food preparation—neglecting to conserve the essential vital elements required for Nature's processes. Numerous homemakers to avoid culinary effort adopt the vitamin concentrate vogue. This is conducive to self medication since the vitamin concentrates should be in the hands of physicians for obvious reasons. It is a recognized fact that a well-planned ample dietary, properly prepared, will furnish our vitamin requirements.

Just as political campaigners go out on street corners to arouse interest for their candidates, so should qualified persons demonstrate the newer knowledge of nutrition to awaken the masses.

OTTO GLADSTONE
New York City.

Who's Who IN HYGEIA

MAJOR THEODORE P. BANK, author of "Army Athletics," page 876, enlisted for Mexican Border Service in 1916. Later, he served overseas with the 32nd division, returning as a First Lieutenant. He then entered the University of Michigan in 1919 and played football under the late Fielding H. Yost. He holds a bachelor's degree from the University of Michigan, and a master's degree in Business Administration from Tulane University. Major Bank spent six years as coach of athletics and superintendent of schools, Patterson, La.; six years as assistant football coach to Bernie Bierman, and as varsity boxing and baseball coach, Tulane University; six years as director of athletics and physical education and as head football coach, University of Idaho. He was recently ordered to active duty in the Morale Branch of the War Department, Washington, D. C., in connection with army athletics.

DONALD A. LAIRD, author of "The Spark of Genius," page 892, was nearly arrested in 1927 by Boston policemen, who thought he was attempting to blow up the city's subway system. However, Dr. Laird was legitimately engaged in making one of the first noise measurement surveys.

He has been a university teacher and department head for twenty years, having taught at Colgate, Iowa, Northwestern, Wyoming and Yale universities. He is now devoting his energies to writing and lecturing on scientific topics. He is author of numerous articles which explain his and other scientist's discoveries about the potentialities of people. He has also written sections of the Cyclopedia of Medicine, the Oxford Medicine, and the International Encyclopedia.

Dr. Laird lives in a one hundred and fifty year old house on the banks of the Connecticut River, at Middle Haddam, Conn. His latest book, "How To Improve Brain Power," is published by Crowell.

LOIS G. LOBB, M.D., author of "A Few Drops of Blood," page 900, received both her B.A. and M.A. degrees from Carleton College, where she majored in literature and philosophy. She obtained her M.D. degree from the University of Minnesota, and interned at Gallinger Hospital, Washington, D. C. After her internship she went to the Psychopathic Hospital at Iowa City, and then to Mount Pleasant State Hospital in Iowa. She is a diplomate of the National Board, a member of Phi Beta Kappa, and Alpha Epsilon Iota, a women's medical organization. She feels that she has too many hobbies, but admits that her chief one is poetry.

NEW "Velvet-Suds" IVORY SOAP

Hundreds of skin patch tests show new high standard of Ivory mildness!

Proved Milder than 10 Leading Toilet Soaps

Technique Approved by Leading Dermatologists

● Today, after 62 years of research, there is a New "Velvet-Suds" Ivory Soap, the sum of many improvements. It is actually milder than ever before.

Milder than any other widely advertised white floating soap. We have tested every white floating soap that is widely advertised with radio, newspapers or billboards —testing by a method approved by eminent skin specialists. These tests show Ivory Soap definitely milder, kinder to skin.

Milder than 10 leading toilet soaps. Hundreds of skin patch tests have conclusively proved New "Velvet-Suds" Ivory is milder than 10 leading toilet soaps. The technique of the tests was approved by leading dermatologists.

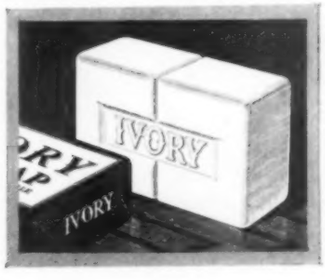
Milder than imported castiles. A recent report on 44 examples of imported castile soaps, purchased at random in 6 cities, disclosed that 42 of these samples showed definite evidence of decomposition and rancidity. These soaps are far below the high standard of Ivory mildness.

The Ivory Soap now at your dealer's is the New "Velvet-Suds" Ivory. Try it today!

99 44/100 % PURE

IT FLOATS

TRADEMARK REG. U. S. PAT. OFF.
PROCTER & GAMBLE



SAFE MOTORING

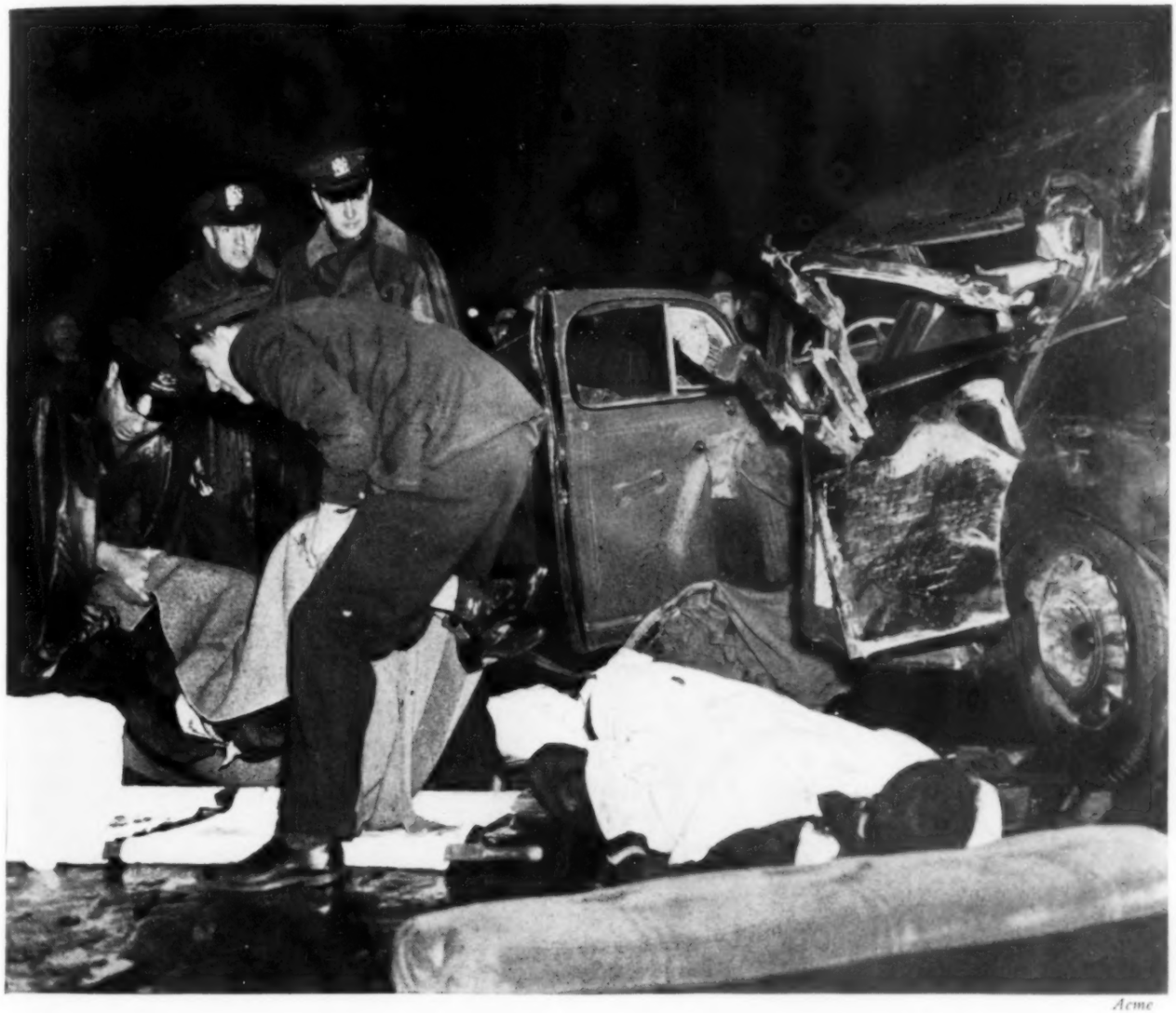
TRAFFIC FATALITIES still appear as a major cause of death in the United States. The time may yet come when the motor car will be known as Public Killer No. 1. Last year 35,000 people were killed and at least 1,333,000 seriously injured in accidents associated with the use of motor cars. The automobile is today's busiest agent of destruction. We have had motor cars for at least forty years and by this time we should have accomplished much more in the decrease of its hazards. Our failure to have any appreciable effect on the nationwide incidence of motor car accidents has indicated the need for scientific study of some of the important factors involved in causation of motor accidents. Some time ago a cooperative research by psychologists, biochemists and biometrists and physicians in the National Institute of Health indicated that long hours of auto driving definitely decrease the efficiency of the driver and make him an increasing hazard on the highway.

Now comes a series of new studies on the "Personal Factors in Safe Operation of Motor Vehicles" by Leon Brody, Ph.D., Research Associate in the Center for Safety Education in New York University. These investigations covered every phase and every factor which might concern reduction in traffic accidents. Accurate measurements were made of the blood pressure of drivers, of their vision, their intelligence, their ability to hear, their reactions to alcohol and other drugs, their personality and other problems. The subjects of the study were 26 drivers of automobiles who had been involved in at least three reported accidents between 1935 and 1940 and an equal number of drivers who had never had an accident. Every member of each group had driven at least 50,000 miles. The conclusions were striking. Little in the age, sex and socioeconomic status of the driver had any definite bearing on his safety as a driver. Much has been written in the past about the speed of the reaction time in applying the brakes. The new studies indicate that this matter has been overemphasized and that far more important is the determination of the way in which the driver responds in a tight situation.

As yet a laboratory test has not been devised that will successfully measure actual driving skill. Nevertheless, the studies in New York University, Center for Safety Education, suggests that skill alone does not insure safety in drivers because accident-repeaters and accident-free drivers gave generally similar performances. Most important was the skill of the driver in passing another car. It was found that accident-repeaters frequently neglect to signal for a turn or to sound the horn in preparation for passing other vehicles. The suggestion is made that educational programs be developed which are devoted to establishing basic skills among drivers and to give time as well for road tests.

As far as hearing is concerned, there did not appear to be any convincing evidence that persons who are partly or entirely deaf cannot drive safely, but vision is a different matter. Here too, however, it was important that other aspects of vision, beside the mere ability to read letters of varying sizes on charts, need to be tested. Muscle balance, depth perception, side vision, distortion of vision and adaptation to dark are important factors in the causation of accidents. Outstanding from a physical point of view was the evidence that accident-repeaters in general have a low blood pressure as compared with drivers who do not have accidents. The person with low blood pressure is apparently exhausted mentally and physically more easily than the one with a normal blood pressure and hence would be more prone to accidents.

Again there was evidence that drunken driving and drunken walking, too, unquestionably are serious causes of traffic accidents. However, intelligence does not seem to be essential to safe and skillful operation of a motor vehicle. "Obviously," says the report, "an idiot



Acme

Motor accidents last year claimed the lives of 35,000 people, seriously injured over a million others. Corresponding figures for this year indicate the toll will rise to even higher levels.

cannot be trusted with a car." Almost any one who has had much experience in driving on Sundays or conveying the family home from a football game knows that the number of such mental defectives now conveying vehicles on country roads and city streets is considerable.

The ultimate recommendations for reduction of traffic accidents include licenses to operate a motor vehicle which should be granted only after submission of a physician's certificate testifying to satisfactory physical condition and freedom from serious illness or disease of any uncorrected deficiency that might interfere with safety in driving. Next should come an actual test of driving skill conducted by a full-time trained examiner. Third, there should be proof that the proposed licensee is alert, cooperative and appreciative of state regulations and of his personal obligations as a driver.

It is suggested that licensed drivers be asked to submit similar certificates every five years on application for renewal of licenses and that more frequent examination be required of elderly drivers.

Drivers of motor cars who have been involved in fatal or numerous accidents or who have habitually violated traffic laws should be subjected to complete reexamination with a view to determining whether or not they are fit to drive. Finally, of course, the educational campaign must be continued, emphasized and reemphasized.

ARMY ATHLETICS

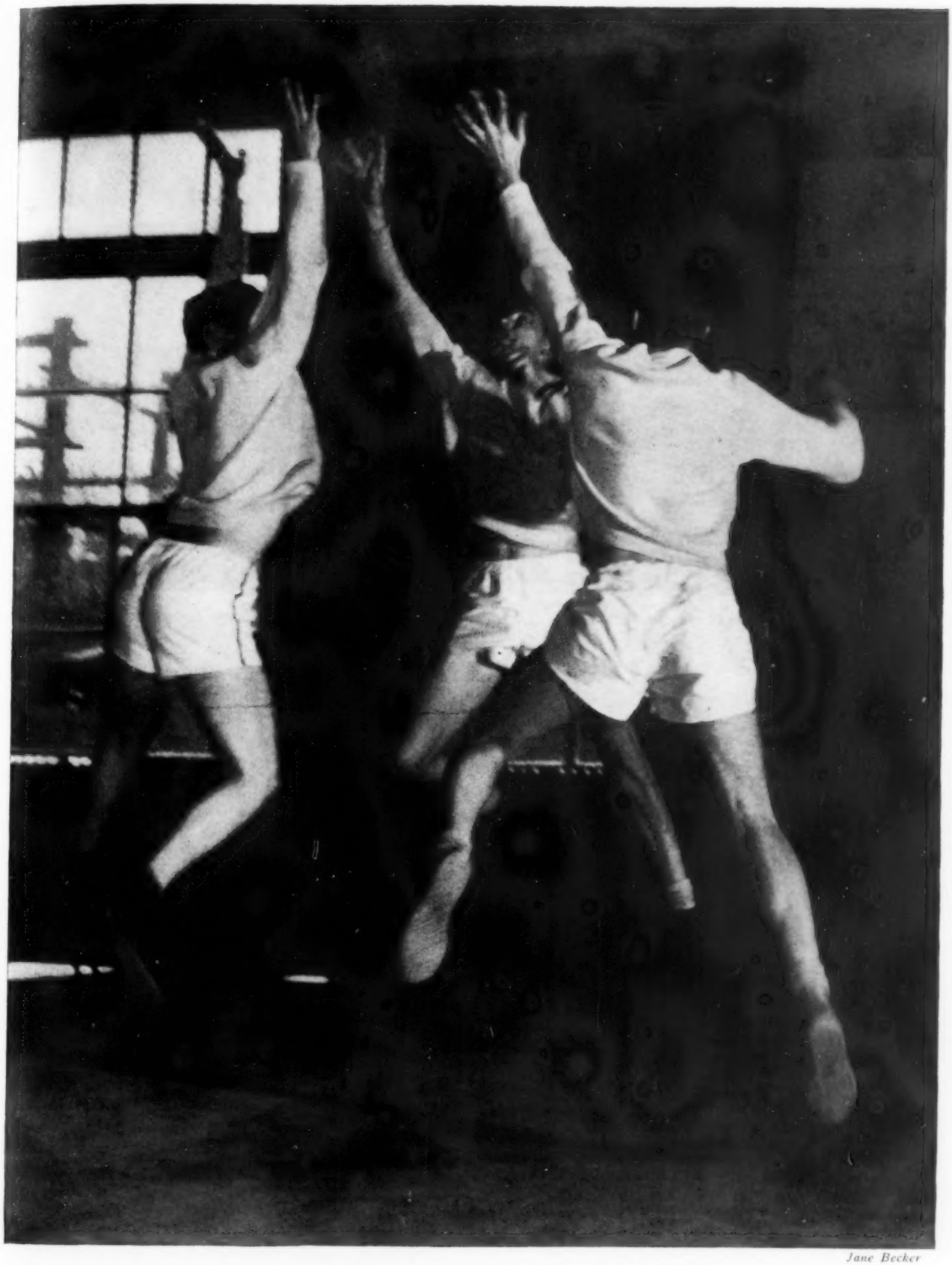
By MAJOR THEODORE P. BANK

THE AIM OF ALL BRANCHES of the armed forces of the United States is to turn out in the shortest amount of time a soldier who is 100 per cent a fighting man. On the Morale Branch of the army falls the twin burden of helping to keep the soldier physically fit and mentally alert and happy. The Athletic Section plays an important part in the many sided activities of the Morale Branch for athletic work builds up the physique of the soldier, gives him an aggressive fighting spirit, trains him in the elements of combat, and provides healthy development and recreation for off-duty hours.

We Americans are all aware of the obvious physical benefits derived from participation in competitive athletics, but we sometimes forget the intangible benefits the soldier receives from competitive athletics. Sports like boxing, or other sports involving bodily contact, rapidly develop in the individual man the sense of confidence, aggressiveness and fearlessness that is always desirable in a trained soldier. Sports like football, basketball and

Wallace Kirkland

Athletics build up the physique of the soldier, give him an aggressive fighting spirit, train him in the elements of combat and also provide healthy development and recreation.



Jane Becker

Sports like football, basketball, or other team-play sports develop the coordination between groups of men that is invaluable on the battle field.

Golf provides relaxation and coordination.

Fencing teaches valuable combat tactics.

Field sports develop stamina and agility.

other team-play sports also develop the principles of coordination between groups of men that are invaluable on the battle field.

Those of us who have actively taken part in the playing or coaching of sports know of the inspirational value of play. A football team roused to a frenzy between halves by the coach may come out in the second half and win the game. But inspiration alone cannot win a game or a battle. There must be instilled in the athlete or soldier the fundamentals of the game, and the Morale Branch is the medium through which not only inspiration but actual combat training itself is carried over from athletic activity to military activity.

Human beings have always engaged in athletics. Long before the advent of baseball in the United States, polo in India, cricket in England, or golf in Scotland, mankind had for centuries pursued all sorts of athletic endeavors. Foot racing, wrestling, throwing at targets, kicking objects, canoe racing, archery and a crude form of boxing were part of the daily life of early tribes. Athletic competitions in those days were more than raw and expressive forms of testing courage and skill; they were actual training for fighting.

To encourage teamwork, army athletic officers are attempting to get each man in camp into an athletic activity by planning intramural games between platoons and companies of the various units. It is hoped that by such a program each soldier will have an opportunity of joining and taking part in that sport which he likes best.

Just as the ancient tribes realized the close relationship between playing and fighting, so do we, and we find that many of the elements of sport are of direct use in a soldier's work. For example, in the game of soccer a man must be ready at all times to kick the ball with either foot. He naturally acquires a short gait, a change of pace, and a balance which will be of immense value in dodging shell holes and obstacles on the battlefield. Football is in the same category, and in addition contains the elements of correct body contact used in close military combat.

Boxing has long been known as the manly art of self defense, and its value to the soldier in hand-to-hand fighting when weapons are lost or not usable is readily seen. Also, nearly every blow and position in boxing has its duplicate in bayoneting. Even in mechanized warfare, "cold steel" is still of potent force and effect. The "long point" in bayonet work corresponds to the "left lead" in boxing, while a blow with the butt of a gun is similar to a "right hand counter." The position of the legs in executing a "chop" with the bayonet is similar to the leg work in the "Fitzsimmons shift."

In encouraging athletic games for off-duty hours, the Morale Branch is performing a service almost as valuable as actual drilling itself. The average soldier in camp is in strange surroundings far different from his normal life. He is cut off from his usual social relationships, his friends, his family, his church, his club and his athletic interests. Everything he does is subordinated to military training, and of necessity a void appears in his new daily life.

Athletics tend to fill this void, for every American boy seems instinctively to want to engage in sports at any hour and at any place. Even though professional drilling and training of the soldier are strenuous, the physical exercise he gets in military training seems only to increase his desire for sports and games. In many army camps today men who have just returned from long hikes will be seen playing baseball or some other sport immediately thereafter.

During the World War athletics in each army camp were handled by a sports director, who was a civilian and an organizer rather than a coach. His work was under the direction and subject to the approval of the commanding officer of the camp. An athletic council of regimental officers arranged the schedules, made up programs, and issued orders and invitations.

In several camps the period from half past three to half past four each afternoon was set aside for athletic work. In others it was made part of each drill period. Facilities were lacking and space was unavailable, so sports using a minimum of equipment and space were generally played.

Today athletic activity is conducted by army officers who have qualified themselves for this type of work. Athletic equipment is being made available to all troops. Existing facilities which are inadequate in some camps are being increased. Fields and courts are rapidly being constructed. Boxing areas are numerous in most camps, and practically every company now has volleyball courts and horseshoe pits.

Programs common to all camps include baseball, softball, boxing, volleyball, basketball and table tennis. In addition, numerous camps have organized tournaments in handball, wrestling, badminton, touch football, and tennis. Track meets are also being conducted in some camps, and as soon as existing facilities are improved it is planned to have all of these activities, as well as archery, speedball and soccer, in every camp.

Americans are extremely individualistic, but they nevertheless respond to the need for teamwork, as is evidenced by our splendid football, baseball and other teams found from coast to coast, whether it is in large or small colleges or schools, or large cities or small villages.

To encourage teamwork we are trying to get every man in camp into an athletic activity by planning intramural tournaments between the platoons and companies of the various units. It is hoped that by such program every soldier will have the opportunity of joining and taking part in the sport he likes.

The World War developed many champions in many sports who made fame and fortune after leaving the army. Who knows what future champions in all sports our present athletic program will develop?

Another thought regarding army athletics is best expressed by Raymond B. Fosdick, Chairman of the Commissions on Training Camp Activities in the last war, who stated in July of 1918:

"It must not be forgotten that all this is a part of military training, and that the pleasure derived is something more than incidental. Muscle counts for little unless there is behind it driving force and control; apathy in an army or navy is fatal. But the fighters who play and who laugh as they play are irresistible."

Personality and Social Hygiene

Personality differences depend on quantity, not quality.

By EVELYN M. CARRINGTON

PERSONALITY is a dynamic system of traits that makes one person different from another. It is dependent on the surrounding culture and its patterns are reconstructed with every change in the organism and in the environment. It does not belong to a person but is rather his attributes as a living, behaving organism.

According to Allport, the mature personality is one that can lose himself in his work, play, contemplation and loyalty to others; that can survey his own pretensions objectively in relation to his abilities; and that has a unifying philosophy of life. In simple words, the mature personality can forget himself, can smile at his own pretensions and knows what he wants of life although he may never attain his goal. The mature personality may spend his life in small and narrow places and yet transcend these limitations. Hazel M. Kerr speaks for those whose lives seem circumscribed. She says:

All skies cannot contain more loveliness
Than just the bit of heaven that is ours;
The world's romance is told in one caress,
One rose can hold the beauty of all flowers.
A single grief is grief epitome,
A single joy can scale joy's utmost height,
And knowing all one perfect love can be,
We know all loves' dear sorrow and delight.

Differences in personality are differences in quantity and not in quality. It is incorrect to say we have a trait or we do not have it. Just as it is impossible to classify persons as being fat or thin—for there are all degrees of fatness and thinness and an intermediate stage between—so it is impossible to categorize persons according to other traits. Such classifications, at best, are only abbreviated descrip-

tions and when used by the uninitiated are apt to be misleading.

In his discussion of the dynamics of personality, Prescott lists three classes of personality needs: the physiologic, the social and the integrative. Sex, which is one of the organic cravings, is a physiologic need. So far as it includes affection, belonging and likeness to others, it gratifies a social need. When sex plays a part in increasing self direction, in balancing success and failure and in bringing the partners into harmony with reality, it satisfies the integrative or ego needs.

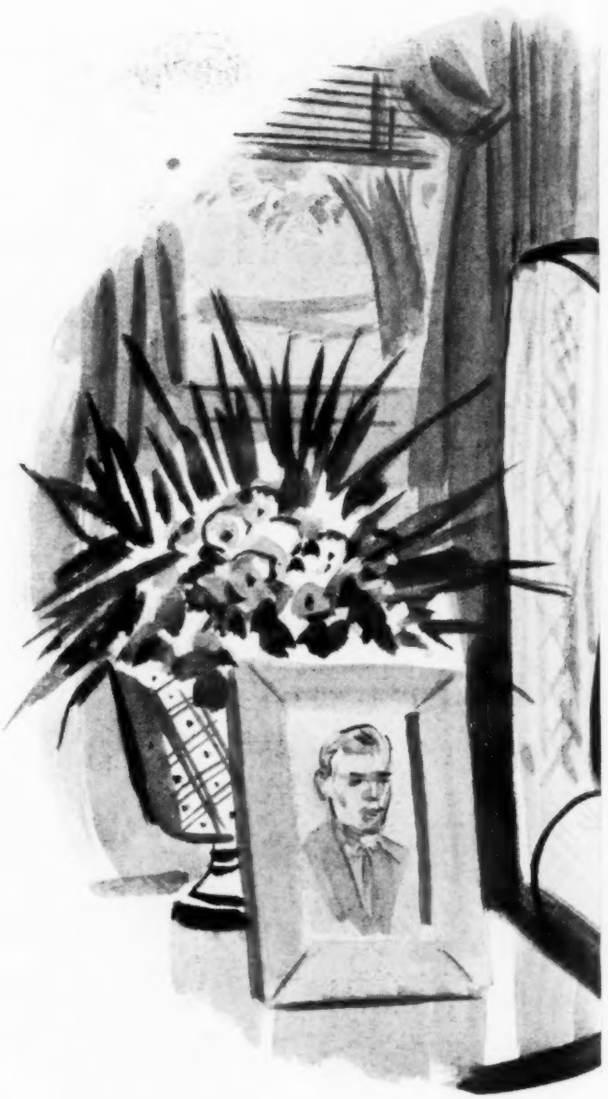
The last century has seen many changes in the attitude toward sex and sex problems. For many years after the good queen's death, Victorian avoidance of the mention of the facts and functions of sex survived. One quaint old maid told of a boating excursion she and a suitor made in the company of a young married couple. The boat ran aground on a sandbar. In the hot sun the young men strove mightily to push it off. They succeeded but the suitor thoughtlessly mentioned that his shirt was wet. This reference to an unmentionable piece of clothing convinced the spinster that he was no gentleman and thereafter she denied him the pleasure of her company.

In the fall of 1939 there died in London a political refugee from his beloved Vienna, Sigmund Freud. More than any other person Freud assaulted the old conventions. He believed sex, or as he called it the libido, the strongest motive in life. He believed and taught that the neuroses and psychoses had their roots in sex repression. At first the world was shocked at Freud's shameless discussion and then became shockproof to his frankness.

World War I did much to dissipate Victorian reticence and many novelists of that and subsequent periods in libidinous language developed sex themes.

It is easy for the pendulum to swing too far. Just as Victorian reticence was not healthy so the unrestrained sharing of one's most intimate life with the public was unwholesome. Today the attitude is better than either of its predecessors. The present generation is frankly and honestly interested in sex and many are considering marriage a goal to which they look and for which they are willing to sacrifice immediate satisfaction.

The present attitude did not spring miraculously into being. It has been derived, in part, from better systems of sex education. Sex education should begin in the home when the small child asks questions about the differences between boys and girls, the origin of babies and where the baby was before it was born. If the mother is embarrassed by these questions or tries to distract his attention, the child will satisfy his curiosity elsewhere. Many mothers feel they cannot discuss these matters with their children because their own mothers taught them such discussions were indecent or because they are not familiar enough with the names of the parts of the body involved in reproduction to answer the child's questions without using terms that have vulgar connotations.



The answers given should be adequate and suited to the child's psychologic development.

Answers given a child about sex should be adequate and suited to the child's psychologic development.

They should not stimulate further curiosity. The answer should not disparage either sex. Contrary to the old nursery rhyme, boys are not made of "snails and nails and puppy-dog tails." All boys are not brave. If a girl succeeds well with a task, she is not "just as good as a man."

As the child grows older, he will want more detailed information about sex. If the parents have answered his earlier questions without embarrassment and to his satisfaction, it is to them he will go with his queries. Never should the parents use fear or shame to keep youth from sex activity.

Nature has made the adolescent physically ready for sexual relationship before he is economically and educationally ready for marriage. This creates a problem. There are physiologic tensions that may express themselves in vague restlessness or in trial and error activity. Leta S. Hollingworth points out that ignorant youth in the grips of an uneducated impulse may seize any proffered release regardless of the fact that conditions may be esthetically revolting and ever afterwards associate passion with disgust. Unhappiness only can result from such initiation.

Instead of tension release, tension tolerance should be encouraged in these young people. They can be taught that desires are not separate and apart but that they may be conceived of as forming a hierarchy. Some of the more primitive desires must be put under control in order for those with a *(Continued on page 928)*

New Skin for Burns

By LOIS MATTOX MILLER

Last year 7,900 Americans, almost half of them children under 5, died of burns. And for every life lost a dozen persons were marked by scars, stiffened limbs, useless fingers. But recently new, remarkable treatments have been developed

A CHILD TUMBLES into a bathtub of scalding water; a fireman is horribly burned in a paint-factory explosion; a pilot crawls out of a crashed plane, his clothes a flaming torch. Hopeless cases all of them—or hopeless they all would have been not so long ago. Today they may be cured.

Last year 7,900 Americans, almost half of them children under 5, died of burns. And for every life lost at least a dozen persons were marked by ghastly scars—tight, puckered skin, stiffened limbs, useless fingers. But within recent years, within recent months, even, remarkable new treatments for burns have been developed. As knowledge of these new technics spreads, burns formerly fatal will be cured—and, miraculously, they will not leave disfiguring scars.

Classic standby among remedies for serious burns was the tannic acid treatment. For five thousand years wet tea leaves had been used for burns. Then, in 1925, Dr. Edward C. Davidson of Detroit applied the active ingredient in tea—tannic acid—and placed the old-wives' remedy on a scientific basis. Tannic acid literally "tans" the tissues. A thick, hard crust covers the exposed nerve ends. This relieves pain, checks the escaping body fluids, and acts as a covering under which new skin may grow.

But tannic acid has serious disadvantages. It "tans" not only the burned tissues but the surrounding healthy tissues as well, destroying cells that ought to be producing new skin. This results in disfiguring scars. Besides, tannic acid is not bactericidal; if germs lurk on the burned surface, infection is likely to thrive under the supposedly protective crust.

Back in 1933 Dr. Robert Henry Aldrich of Harvard Medical School started a search for a burn remedy that was crust-forming, nonscarring, and a powerful germicide as well. He experimented with a variety of antiseptics, finally coming to the aniline dyes. Gentian violet looked promising. Applied experimentally on burns at Johns Hopkins Hospital, it cut the fatality rate from 42 to 13 per cent.

But gentian violet killed only one type of bacteria. Dr. Aldrich persisted in his experiments and at last produced an effective combination of three different dyes: crystal violet, brilliant green and neutral acriflavine. By using this mixture on burned patients in Boston City Hospital, he has reduced the mortality rate from serious burns from 34 per cent to 8 per cent.

Harsh scrubbing with soap and antiseptics used to be standard procedure in preventing infection, but Dr. Aldrich dispenses with this, disturbs the burned area as little as possible. He trims away loose bits of skin, then sprays his triple dye with an atomizer directly onto the burned areas. When one coat is dried, another is sprayed over it, until the skin looks like purplish-brown leather. Bacteria that escape the sprayed dyes soon register an unmistakable danger sign: the spot becomes soft and moist. The doctor simply snips away this skin and sprays on a new coating of dye. The common dangers of infection and toxemia are greatly reduced.

Today British surgeons are using the triple-dye treatment on war burns. It is especially valuable in treating flame-seared fighter-pilots who escape from crippled aircraft but are badly burned about the face, hands and legs.

The triple dye has been used successfully on burns covering as much as two-thirds of the body—burns formerly almost always fatal. The smoothness of the healing process is amazing. Gradually, little islands of new skin, pink and normal, appear on the purplish "hide" and spread over the treated surface. No longer does the skin pucker nor do tissues tighten. Any grafting that is necessary is done at this time. Cosmetically, results are far handsomer than with the old treatment.

British war surgeons have also devised a new technic, known as the "envelop cure" for treating burns. The burnt area is covered with an envelop of transparent, water-proof silk; three times a day sodium hypochlorite is sluiced around the wound inside the envelop. After irrigating the burn for twenty minutes, the envelop is drained and then inflated with oxygen. Sodium hypochlorite was chosen because it is a completely nontoxic antiseptic, with a special property of stimulating the growth of living tissues.

Excellent results have been claimed for the envelop treatment, but it is successful only when the burnt area is on an arm or leg. Obviously, it cannot be used for facial burns, for burns covering large areas, or where any of the body's orifices are involved.

And now the newest of the sulfa drugs promises to be superior even to the triple dye. Since last January, Dr. Kenneth L. Pickrell of Johns Hopkins has treated 115 burned patients with sulfadiazine and lost only one, a 4 year old child brought in at the point of death, her entire body burned except for small patches on the feet and ankles. Results are so successful that the method is now used in treating all burns at the Johns Hopkins Hospital. Even while the patient is being treated for primary shock, nurses begin spraying the burned area. Patients with only skin-deep burns are often ready to go home after two hours; in more serious cases the spraying is repeated at intervals for days.

Sulfadiazine prevents infection and, over severe burns, forms a thin, tough, pliable and transparent film. It can even be used around the eyes with safety. Doctors believe this new sulfa drug will obviate skin grafting and plastic surgery in all but extreme cases.

Treatment of the actual burns, however, is only the second phase of the physician's problem. During the first three days, severely burned patients are more likely to die from "shock" than from the burn itself. Blood plasma, so necessary to the coagulation of the blood and the functioning of the circulatory system, seeps out of the bloodstream into tissues surrounding the burn; this lowers blood pressure, pulse rate and temperature. Formerly, fluids were administered forcibly and in large amounts to compensate for loss of blood plasma. Recently, however, Dr. H. M. Trusler and his associates at the Indiana University Medical Center discovered that the enormous quantity of fluids, thus administered, dangerously thins the blood, prevents coagulation. Dr. Trusler's work has led to the substitution of blood transfusion or plasma injections as a standard method of treatment. Dreaded "shock" is thus averted, and the burn itself can then be treated.

All large burns require medical attention. Safe home treatment is limited to small burns of the first degree—burns that do not blister. Placing a mildly burned hand in warm water will check the effect of heat and stop pain. Boric acid can be mixed with cornstarch and dusted on a burn; a thick paste can be made of bicarbonate of soda; or strong tea can be applied. There are also a number of commerical preparations for the family medicine chest. *Greasy salves or unguents must never be used except on small superficial burns*—their removal, when the doctor comes, is painful and difficult.

Burns of the second degree, those that blister, must be treated more cautiously, preferably by a doctor, because ruptured blisters afford an ideal opening for infection. For all deep or extensive burns, emergency treatment should be limited to keeping the patient warm—wrapped in blankets or put to bed—and as comfortable as possible. Wet dressings of sodium bicarbonate (about three ounces to a quart of boiled water) may be applied safely to burns on exposed parts of the body. Clothes sticking to a burned portion of the body should not be removed lest the raw flesh be further damaged. The victim should be put, clothes and all, in a tub of warm water.

Further treatment should be left to the doctor. And it is heartening to know that he has new weapons at hand, that medicine has made one more great advance in the war on man's ills and misadventures.

Courtesy of Presbyterian Hospital, Chicago

Life for the newborn baby in the hospital is far from being easy. From early morning until late at night he lives on a rigid timetable, answerable to every will but his own and competing in physical contests with opponents who are several times his size.

Baby's a Busy Body

By R. M. CUNNINGHAM Jr.

VISITS TO THE obstetrical department of the hospital are governed by conventions at least as severe as those which set the pattern for a coronation, or a caucus of the teamsters' union. Patient and visitor are required to spar cautiously at the opening, exchanging observations which bring out pretty conclusively the fact that the mother certainly doesn't *look* as though she'd had a baby just three days ago, or five days ago, or eight, as the case may be, the further fact that she never felt better in her life, and the final fact that the nurses simply *adore* the baby, whose sex the visitor has forgotten temporarily.

This conversational theme goes on for quite a while, until one or the other cracks under the strain and says something natural. After that, ordinary gossip will do until it's time for the visitor to leave, when the iron fist of etiquette takes over again. "Do stop at the nursery on your way out," it's compulsory for the mother to say; "I'm dying to have you see Butch!" If it's a girl, she'll say Toots. No one knows why young parents nowadays think it's so cute to call their babies Butch, or Toots, but they do. They think it's terrific.

So the visitor raps at the glass door to the nursery and mouths the baby's surname through the door at the nurse, who chooses one from a row of bassinets and wheels it up to the door, and there's Butch, or Toots. The blanket covers his face up to his ears, or would, at any rate, if he weren't lying with his face buried, making it impossible for anything to be seen except a small zone at the top of his head, which doesn't look like much.

If the baby's father has come down the hall to make certain the visitor's reaction is appropriately enthusiastic, and he has, a crisis is at hand. Only one course of action is indicated. The visitor must gaze at the bassinet in com-

A Day in the Life of a Baby

The nurse must scrub her hands before each operation.

The baby's daily bath is gentler but just as thorough.

He must be weighed both before and after each feeding.

He receives his meals on either a 3 or 4 hour schedule.

plete silence for a moment or two, registering amazed admiration with whatever expression he can muster up under pressure. Then he may say philosophically, "Pretty soft life! Sleeps till he's hungry, cries till he's fed, eats till he's sleepy. Pretty soft!" The father, who hears this witticism as many times a day as his wife is allowed to have guests, agrees sagely and goes back to report, and the visitor may take his leave untroubled by the knowledge that his remark, like many of those designed primarily to make a noise when silence is out of the question socially, was a thorough misstatement of fact.

Life for the newborn baby in the hospital, far from being the slow pitching of popular fancy, would reduce a dictator to tears in less time than it takes to say "regimentation." From early morning until late night, the baby lives on a rigid timetable, answerable to every will but his own and competing in physical contests with opponents who are ten or twelve times his size and keep sending in substitutes. There are only two or three things which he is permitted to do, or can't be prevented from doing, of his own accord; none of these adds to his comfort.

To begin with, when most of the world is turning over for the second time and staring moodily up at the ceiling around 7:30 a. m., the baby has been on his beat for at least an hour and a half. He's been unpacked from his bassinet, rolled out on the nursery table, had his clothes changed, been wrapped up in a blanket again and wheeled down the hall for a breakfast which is no great treat, brought back to the nursery and put away in his bassinet. That's only the end of the first round. As soon as he gets his wind he's up on the table again, shadow-boxing like mad as the nurse gives him his bath and weighs him in for the day.

While the world is struggling with its suspenders, he's back in his bassinet breaking in a new suit of clothes and probably giving some expression to his opinion of the hospital, which is unfavorable. This doesn't get him anywhere, because the nurses are busy cleaning up for the day, scrubbing or wiping off everything in sight and checking to make certain that the row of bottles and jars on the shelf over the table contains, among other things, cotton balls, applicators and sponges; alcohol, boric, mercurochrome and silver nitrate solutions; nipples, lubricating jelly, zinc oxide, cold cream, mineral oil and talcum powder. All these are daily needs in the hospital nursery, like pencils in an office or a deck of cards in a gas station.

Baby goes to lunch early, but it must be remembered that he dresses for every meal and weighs in before and after eating, with the nurse washing her hands all the time and sterilizing everything but the doorknobs. That's her training; say "germ" to a baby nurse and she'll go down on a point like a bird dog, her nostrils quivering underneath her surgical mask. It's a good thing for the baby, too. He's got enough on his hands as it is, without germs. If his number comes up today he'll be called out to act as dummy in the bathing and dressing demonstration the nurses put on every day for the mothers who are about to leave the hospital, a task some-

At 7:30 a. m. he has been on his beat for over an hour.

At this age his clothes have to be changed frequently.

thing like that of the good-natured stooge who fakes drowning for the benefit of a girl scout trying for her life saving badge.

After an early afternoon meal with the usual change of costume going and coming, the baby's allowed to take a nap. If the truth were known, the visitor who was so envious of the soft life in the nursery is probably napping himself at about this time, his feet up on a desk somewhere, a faraway look in his eye, and his secretary standing by to tell callers he's in conference. This doesn't go at the hospital, where the baby is wheeled out to the door every time during visiting hours. If he's smart enough to keep his head under the covers, who can blame him that has a reception clerk to identify every visitor?

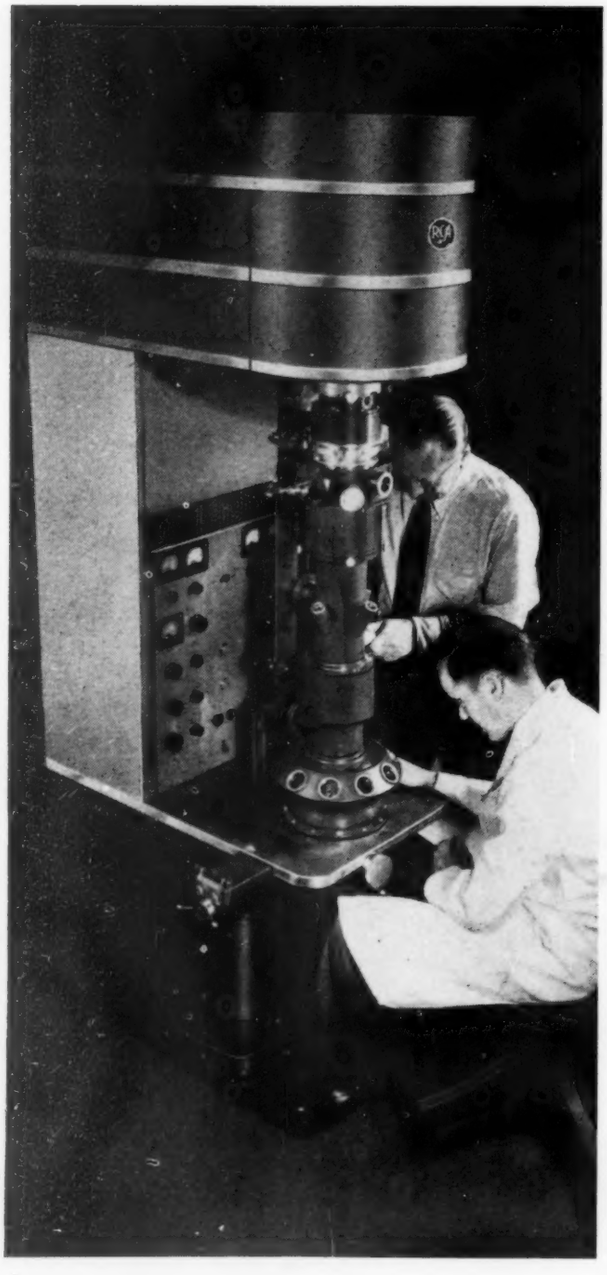
It's a short rest anyhow, because the baby's on the boards again as soon as visiting hours are over. It's pretty slick, the way the nurse whisks his clothes off, gives him a going over with the items in the bottles and jars, and gets him laced into a new outfit. He fights every inch of the way, and it's going to take his mother about an hour to get this job done, the first month or so. The nurse does it in six minutes. She has to, with eight or ten babies to take care of and tight schedules to meet from hour to hour throughout her shift. It looks as though she might get the horn any time for unnecessary roughness, but actually she's playing a clean, hard game. She's just firm, and sure of herself, the way a mother is with her second or third baby.

However confident the mother may become after she's sure the baby won't break when she handles him, she usu- *(Continued on page 908)*

Even fathers are forced to look through a glass window.

He sleeps between manipulations of a vigorous routine.

The ELECTRON



The new electron microscope can magnify viruses, bacteria and other minute substances as much as 100,000 diameters—or from 20 to 50 times more than the best optical microscope yet developed.

IN THE SEVENTEENTH century mankind discovered that our entire world was composed of extremely small particles of matter known as atoms. The first microscope soon made its appearance and paved the way for study of disease-causing bacteria. Subsequently it was also found that bacteria might be of the helpful variety. But whatever the nature of these tiny creatures, the microscope aided and abetted scientific observation to a certain, well-defined point.

This defined limit, beyond which medical exploration could not penetrate, was caused by the unbelievable smallness of the particles, and an additional handicap due to the fact that these minute particles preferred to lie close together. The ordinary light microscope was powerless to separate or discriminate between two of these units, which lay separated by less than $\frac{1}{25,000}$ of an inch.

During the last decade, however, a new science known as electronic optics has been under test in the laboratory and, from its exploratory research, has emerged a unique instrument known as the electron microscope. This microscope is capable of magnifying specimens almost one hundred times more than the ordinary microscope. The electron microscope operates by means of a "cathode ray" system, similar to that employed in television units. As another advantage, photographs may be taken of slides magnified by the "electronic eye." These photographs

MICROSCOPE

The poor old scope is left behind,
For now to human eyes
The things just dimly seen before
Have form and shape and size.
Bacteria are monsters large,
Complex are their insides,
Flagella, trailing yards behind,
Are hollow tubes besides.

—D. Spring

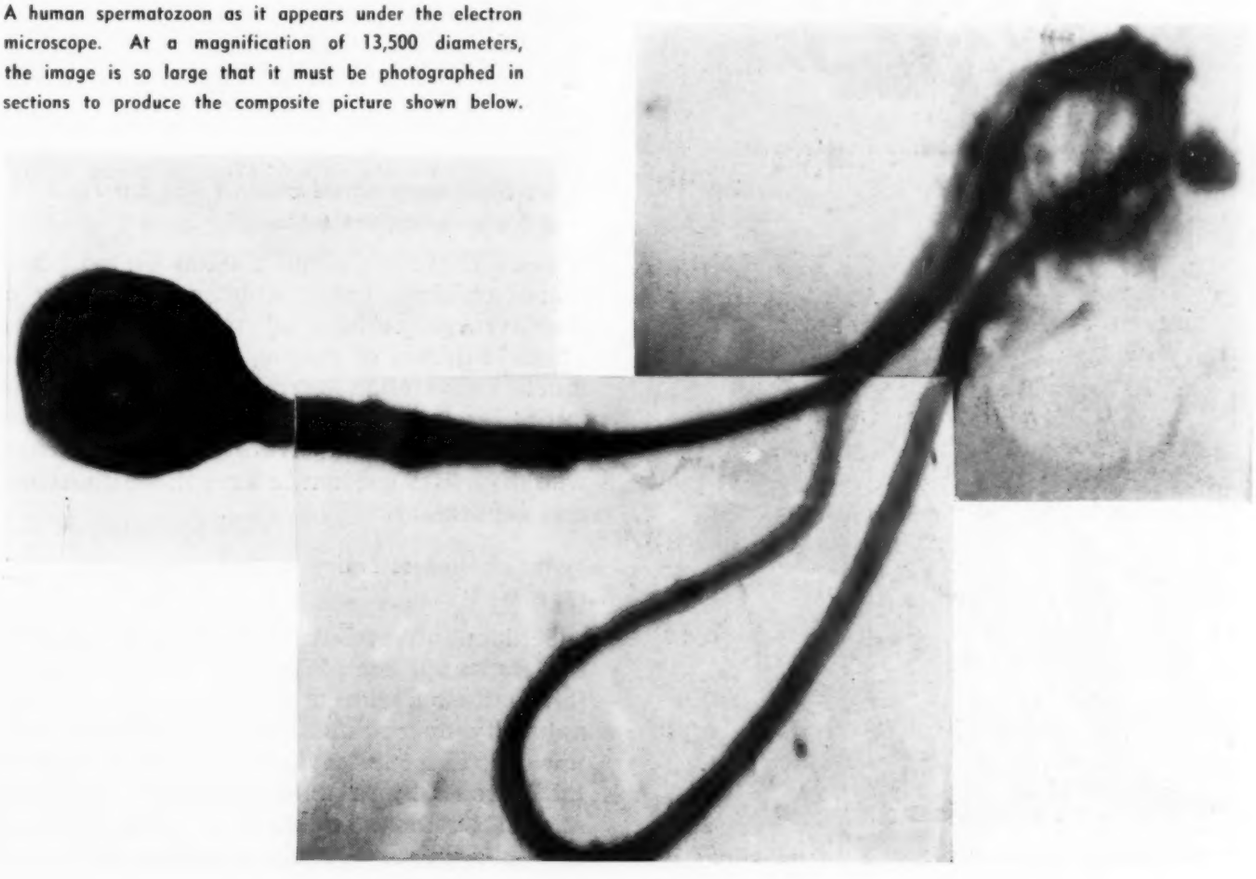
By EUGENE A. CONKLIN

then may be carefully analyzed and studied by science researchers distant from the miracle microscope.

Smallpox, infantile paralysis and even the common cold have long been known to be caused by viruses. But what are viruses and how are they formed? What are genes, those mysterious particles of matter which determine our height, appearance and eye color? What secrets do animal tissues hide from the eyes of research scientists? Is it possible that precious metals may be decomposed to yield even more precious—but at present invisible—components?

All these problems are capable of examination through the new electron microscope. The instrument itself is compact, capable of being housed in an ordinary room, a striking improvement over the first giant model. Also, with the new microscope, 6 persons can observe at the same time the new-found wonders contained within the object used for microscopic study—a truly great scientific advancement.

A human spermatozoon as it appears under the electron microscope. At a magnification of 13,500 diameters, the image is so large that it must be photographed in sections to produce the composite picture shown below.



The Spark of Genius

There is nothing a mother can do before birth to increase her child's brain power. However, her methods of raising and educating the child can help—or injure—his latent mental acuity

By DONALD A. LAIRD

The brain power of college professors is widely variant.

Some students may be more brainy than their professors.

Are college professors brainy?

Not especially. Tests have shown that the average college or university faculty member has only slightly more brain power than the average student at the same institution. Of course, some college teachers are much brainier than others; so also are some students. It is a fact that about one fourth of the college students are brainier than the average teacher in the ivy-clad halls of learning. The professors who have devoted their lives to specialization in one particular field of learning know a great deal more than their students, but they have an almost negligible edge on them as far as brain power itself is concerned. This is one reason why some professors find it difficult to keep the respect of some of their students.

Are there many school children who are as brainy as college teachers?

Yes. There are about 250,000 United States school children today who are as brainy as the average college or university teacher. These children, of course, do not yet have as much information as the college professors, but at least 100,000 students have more native brain power than the average man of learning who dispenses wisdom in the college classroom and laboratory.

Are children as brainy as their parents believe?

Seldom. Worried mothers and scolding fathers may complain about the senseless things their children do, but parents rather naturally overestimate their children's brain power. The cute sayings of children impress the parents more than outsiders. Likewise, scientists seldom find that the child possesses as high a degree of brain power as the parents

Children are seldom as brainy as their parents believe.

thought. This reflects a commendable parental pride, but it also means that thousands of parents plan careers for their children which are far beyond the children's capacities. Blasted ambitions, thwarted hopes and false discouragement are left in the wake of this overestimation of the brain power of the coming generation. While encouraging hope and planning a career for one's child, the average parent should watch for this tendency to shoot too high, if he wishes to prevent future heart aches for both child and parent. Perhaps the child suffers more than the disappointed parents when the young man does not measure up to the brainy expectations which the parents had encouraged as a result of the little boy's seeming cleverness.

Do school teachers usually recognize brainy children?

No. Grade school teachers spot dumb youngsters more easily than brainy ones. The teachers miss about three fourths of the brainy ones, but only half of the dumb ones.

Are Indians brainy?

No. One white child in a hundred has a chance of being brainy, one Negro child in 30,000, but practically no Indian child reaches the same standard of braininess.

Are lightning calculators brainy?

Seldom. A disproportionate number of lightning calculators have so few brains, other than their calculating ability, that they are, to all practical purposes, feebleminded. Ability

Grade school teachers may not recognize brainy children.

Indian children seldom attain a high intelligence rating.

to deal with figures constitutes only one of at least seven basic powers which combine to form a person's brain power.

Is great artistic or musical ability a sign of braininess?

No. An average dose of brains seems to be enough for a celebrated artist or musician. Accomplishment in these fields depends more on special gifts and their cultivation than it does on general braininess. This helps us understand why so many famous musicians and composers have been improvident.

Can a family have one brainy and one dumb child?

Not usually. Children in the same family are usually closely alike in brain power, even though they may be very unlike in interests and tastes. Yet nature may play strange pranks and give a genius and an imbecile to the same couple, but the possibility of this happening is slight.

Do deepset eyes, or bushy eyebrows, indicate braininess?

No. Popular superstition gives the eyes much credit for one's braininess. As a matter of fact, however, nothing has been discovered to indicate that there is anything about the appearance of the eyes which reflects their possessor's brain power.

Are homely people more likely to be brainy?

Just the opposite. Brainy people have more attractive faces, in general, than do people who have average brain power. Part of this beauty is due to an active and alert expression, in contrast with the puzzled physiognomy of a person who does not readily understand what is going on. Some brainy women may give a superficial impression of not having beauty, since they are inclined to omit cosmetics. Shirley Temple is an interesting example of the fact that beauty and brains do go together; Miss Temple is brainier than one girl in a thousand.

Are brainy children undersized?

It seems so. The smallest child in the school room is usually the brainiest. The child is the smallest because he is also the youngest. He is big enough for his age, but small for his grade, because he has skipped a grade or two and seems conspicuously small in a room with the older children. This has given rise to the fallacious popular belief that undersized shrimps are likely to be brainy. The large—not fat—adult is more likely to be brainy than is the pip-squeak who is showing off his knowledge to help him feel less inferior.

Are girls more likely to be brainy?

No. Girls and boys have about an equal chance of being brainy, but the world makes it easier for a man to get credit for his braininess.

Does a big head indicate braininess?

No. It may indicate water on the brain, or imbecility. There is no conclusive evidence that the size of a person's hat has anything to do with his braininess.

Are brainy people more likely to go crazy?

No. Some outstanding brainy people may have been peculiar and even insane, but on the average brainy people have better mental health and less danger of a mental breakdown than other people. Popular opinion has been misled by second-raters who are mentally unbalanced, and who have pretended to be geniuses.

Are brainy people likely to be conceited?

No. Brainy folk usually realize that they have better heads than others, but they do not rub it in. The brainy person is more likely to know his own shortcomings and consequently is more modest, even timid. Look for conceit in the relatively dumb person whose gray matter is so dense that modesty cannot penetrate it. The dominating, bossy, know-it-all is usually of average, or less, brain power.

Are brainy people happy?

Seldom. Brainy people are more unhappy than the average for several reasons. They are lonely; average and dumb people avoid them. They have sense enough to worry about many things. There is a touch of resentment as they see dumb people make money by sharp deals. This loneliness and unhappiness increases as the brainy person becomes older.

Does the world reward brainy people?

Seldom. Brainy people earn a few more dollars a week than the average person, but an average man with *(Continued on page 926)*

Does Your Job Depend on Hearing?

By WILLIAM E. GROVE

TO DETERMINE whether there are any special problems involving the person who is hard of hearing in industry, consideration must be given to such factors as the specific hearing defect and its degree, the psychologic attitude of the person to his defect, the attitude of industry to the handicap, the type of work engaged in, the fitness of the handicapped person to do a particular type of work and the degree to which he has sought to compensate for his handicap.

Every otologist knows that the average person who is hard of hearing has a peculiar psychologic reaction to his defect. Especially is this true when the hearing defect develops during adult life. Because of his handicap the person is apt to become an introvert. He lives within himself. He ceases to mix with his fellows. He ceases to attend public gatherings. He is apt to become sour, suspicious and misanthropic. He imagines that people are talking about him because of his handicap. He imagines that he cannot get a job or hold a job. Generally, he makes too little effort to compensate for his defect either by lip reading or by the use of a hearing aid, or to better his earning capacity by special education along some particular line. In looking for work he is prone to advertise his defect and use it as a lever in obtaining employment instead of pushing his special capability or special training to perform some particular type of work. In other words, he is apt to get the idea that because of his special handicap the world owes him a living. This sounds like a harsh arraignment of those handicapped by defective hearing, but it is the result of many years of observation of the hard of hearing as a class and does not apply to every handicapped person.

The person who is hard of hearing must learn to regard his handicap not as a cross to be borne, not as an insurmountable affliction, not as something which sets him aside from his fellows, but rather as a handicap that can be surmounted, that can be compensated for and that need not hinder him from getting or holding a job. He must be neat, respectful and honest with himself and with his employer; he must not pretend to hear and understand instructions when he does not. No employer, foreman or supervisor of labor will object to repeating an order which has not been heard or understood, but he will object to having production slowed up by a person who, to shield his defect, pretends to hear and does not. If the person with defective hearing finds himself in an occupation in which his loss of hearing is a distinct handicap he must strive to perfect himself in some allied branch of work in which good hearing is not so essential. There are many organizations to which he can apply for such reeducation and rehabilitation. He must use every effort to perfect himself in lip reading and much can be accomplished in this regard without special training. Such special training is usually available to him. If his hearing defect becomes so marked that he cannot hear the spoken voice at 3 or 4 feet, he must overcome his aversion and reluctance

to wearing a hearing aid. Hearing aids are now available to him through many of the state rehabilitation departments when necessary for occupational and economic purposes. Inasmuch as he is not as easily distracted by conversation and noise about him, he is apt to concentrate better on his job, especially if that job is one which he can do by himself and if he is not obliged to work as one of a group. In this way he is capable of doing better work in certain types of occupation than a person with normal hearing.

In order to get the point of view of industry itself toward this question I sent a questionnaire to about fifty employers of labor in all types of work and occupations. Forty-three questionnaires were returned to me. The questions, together with the results, follow:

Is there any particular department in which persons with defective hearing are handicapped? In answer to this question 31 employers answered "Yes" and 11 "No." In general, there are certain types of occupation in which defective hearing in the employee is regarded as a handicap by the employer. Such occupations are telephone operators, stenographers, clerks in stores where salesmanship necessitates much conversation, jobs in the heavy industries where there is heavy moving machinery, such as cranes, trucks and conveyers, and where orders and directions are given by bells, whistles or verbally. Employers generally believe that the person who is hard of hearing does good work in jobs in which he can do a piece of standardized work by himself and when he is not obliged to work in a group. With the exception of these types of employment, there is probably no type of work which the person who is hard of hearing cannot do as well or better than some one with normal hearing. It, therefore, is best for him not to seek work in these particular occupations, or if already engaged in them, as his defect increases, to train and perfect himself in some other line of work, preferably in a type of work somewhat allied to his former job.

Is defective hearing actually hazardous in any particular department? This question was answered in the affirmative by 31 employers and in the negative by 10, and again it is interesting to note that the 31 answering in the affirmative were all engaged in the so-called heavy industries. The objection raised was the inability of the person to hear warning signals of moving machinery, such as overhead cranes and conveyers and of trucks, tractors and trains operating on the ground. Employers also contend that the person who is hard of hearing may also be hazardous to his fellow workers in jobs in which sound signals are essential to such jobs as cranemen, hitchers, mill wrights, trainmen, yard workers, truck drivers, electric service line men, bridge tenders, tree trimmers and sewer workers. One employer writes: "Generally speaking, all of our shop work would be hazardous to a man having defective hearing. It isn't that normal hearing is mandatory to properly perform any specific task, but rather that in the event of any emergency full use of all faculties is necessary." Now, is this objection on the part of the employers a theoretical one only, or is it based on actual fact and experience? Let us see.

In the state of Wisconsin the employer of labor must furnish to the State Industrial Commission a first report of injury on a standard blank. One of the questions on this blank reads, "Previous Physical Defects: Eye, Ear, Hernia or otherwise." In other words, he is obliged to indicate on this blank whether the injured employee had any previous ear defect. The records of the State Industrial Commission indicate that during the years 1937, 1938 and 1939, 63,265 cases with compensable injuries were settled. During these three years there were only two cases settled in which the employer's original report indicated "Defective Hearing" as a previous physical defect. And these two cases were not serious injuries as they involved only 39 days time loss and $65 for medical care.

According to Jay Howard Cooke (*Volta Review:* Dec. 1940, p. 855) the Division of the Deaf and Deafened of the Michigan Department of Labor reports that in the year 1940 they were advised of only one compensable accident to a deaf factory worker and only three such cases were reported to them in recent years. In two hundred letters returned to the department in response to a questionnaire there was no suggestion on the part of the employers that deaf persons, as such, are susceptible to injury.

These statistics would certainly indicate that the person who is hard of hearing is, if anything, less susceptible to injury than some one with good hearing. We must, therefore, conclude that the objections raised by the employer to employing a person who is hard of hearing because of the hazard involved are theoretical and not well taken.

Do you have the hearing tested? To this question 16 employers answered "Yes," and 18 "No." In general, no specific hearing tests were given in the pre-employment medical examinations. As one employer said, "For all practical purposes defective hearing discloses itself during the course of the employment interview or during the medical examination itself."

What degree of hearing do you think necessary for your employees? This question was answered in a variety of ways. Eleven employers required normal hearing; 7 wanted ordinary conversation; 3 asked about 50 per cent of normal; 3 answered "depends on the occupation"; 2 desired good hearing; 1 required 10/20 for the whisper; 1 said 5 feet for conversation or better; 1 wanted about 65 per cent; 1 demanded about 75 to 80 per cent, and 1 said "average hearing." The rest did not answer the question at all. Thus, it is apparent that there is no unanimity among employers as to what degree of hearing loss actually constitutes a handicap.

Would a defect in hearing act as a bar to advancement? Seventeen employers answered this question in the affirmative, and seven in the negative. Fourteen stated that it would depend on the occupation. Other comments were: "Not necessarily if the man is qualified"; "Not in clerical positions"; "Yes, unless high skill is an offset." In the national survey on "The Deaf and Hard of Hearing in the Occupational World" conducted by the United States Department of the Interior and published as Bulletin No. 13, 1936, the prospects for promotion as obtained from the employers of labor were listed as follows: excellent 8.1 per cent; fair 21.2 per cent; none 70.7 per cent. It would appear, therefore, that while persons who are hard of hearing can obtain jobs and hold them their prospects for advancement are not as good as persons with normal hearing "unless high skill is an *(Continued on page 924)*

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Even in the heavy industries the consensus of employers seems to be that there are some types of work which the person who is hard of hearing can do both well and efficiently.

HELP for

EVERY YEAR at least 8,000,000 women in the United States between 40 and 55 years of age go through the menopause. Many —perhaps 40 per cent—suffer pain and discomfort, with characteristic sensations of heat and cold known as "flashes." Crying spells, depression, sleeplessness, and just "nerves" are other significant symptoms. Until recently the majority of these women suffered in silence. Many, mindful of old wives' tales passed down by their mothers, feared insanity; for depression was not unusual. Uninformed or inhibited, they did not consult a doctor.

Then medical science moved forward. After forty years of scientific experiment in the laboratory and ten years of testing on women themselves, doctors reported that women could

Black Box Studios

WOMEN OVER 40

By HELEN HABERMAN

be given a hormone substance, known as estrogen, which would help to replace their own dwindling supply of hormones—apparently largely responsible for their physical and mental torment. This new hormone, properly prescribed by a competent physician, could mitigate suffering for millions of women. Report after report appeared in the medical periodicals confirming, by the testimony of thousands of doctors who tried estrogen on their patients, that it was effective.

One obstacle stood in the way of widespread use: the high cost of the natural estrogen substance. Treatment, to be effective, must be given for several months, often for a year or more. This meant visits to a physician as often as twice or three times a week so that the hormone could be injected. Treatment was expensive also because of the high cost of material used.

The Federal Food and Drug Administration has just sanctioned the marketing of a new synthetic hormone which can be given by mouth. It has five times the strength of the natural hormone, has proved effective in as high as 91 per cent of the cases in which it has been tested, and will cost about one tenth as much as natural estrogen; probably not more, for most women, than one half cent a day.

This new synthetic product is correctly known as diethyl stilbestrol. It has also been called "stilbestrol" but the Council on Pharmacy and Chemistry of the American Medical Association, which helps to determine correct names for new medical products, has just expressed its preference for the more accurate "diethyl stilbestrol." This sensational drug was developed by British scientists in 1938. Its announcement was welcomed with "guarded hopefulness" by medical men. Early tests, made by doctors throughout the world, showed that many women could not tolerate the drug. In some it caused nausea and vomiting. Sometimes it produced skin eruptions. Apparently a few women became even more nervous than they were before. Authorities held back; they would not approve the marketing of the drug until they were sure it could do no harm.

Now, after three watchful years, sufficient evidence has accumulated so that the drug may be safely released to millions of needful women. Drs. M. Edward Davis and Melbourne W. Boynton of the University of Chicago made a two-year study of 400 women who were going through the menopause. Each woman received treatment with stilbestrol for 6 to 21 months. These competent authorities concluded that "the drug has extraordinary clinical possibilities." They report that regular use in proper dosage alleviated all the "flashes" and other menopausal symptoms.

Another group of physicians, reporting in *The Journal of the American Medical Association,* found that 68 per cent of 122 patients were totally relieved of their suffering and 27 per cent were partly relieved. Only 4 per cent failed to benefit. Study after study in the medical literature confirms these isolated tests.

Probably recent investigators succeeded where earlier scientists had failed because they used stilbestrol in small dosage. If a small dose of one half milligram a day is given, according to these physicians, there is nausea and vomiting in only 3 per cent of the cases. Many physicians when starting out with the new drug will proceed even more cautiously. They will prescribe only one tenth of a milligram at first.

Under the rulings of governmental and medical authorities, every safeguard will be taken, especially at the beginning, to have the new treatment used only under the guidance of competent medical men. Women will not be able to buy it without a prescription. But, instead of going to the doctor's office twice or three times a week for treatment, they will be able to take the drug orally, and visit their doctor less frequently.

Thus millions who never received help before will be helped now, safely and at relatively slight expense.

A FEW

Your blood is a marvelous blending of mysteries on which every organ of your body is dependent for the food required to keep it alive and working for you. It is your own private defense system in a never ending war between you and disease

By LOIS G. LOBB

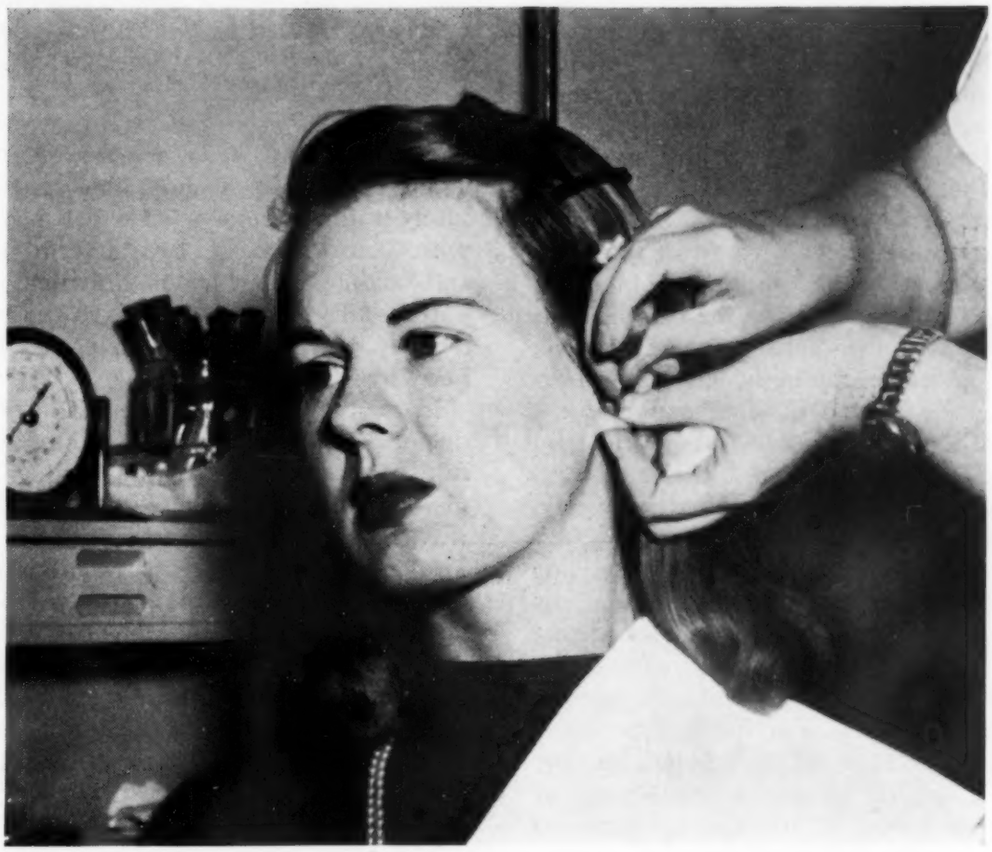
"JUST A LITTLE prick now; it won't really hurt at all." Has your doctor ever said that to you as he held your ear lobe firmly and dabbed alcohol on it? If so, you may have felt just a little twinge of resentment to match the little jab he gave with his thin blade. But did you ever stop to wonder what was the meaning of this common medical ritual? You gave a hurried glance at the slim glass tubes with the queer little bulge near the top, maybe you even watched him carefully fill those bulbs with fluid. You consciously avoided that thin smear of your life blood on the rectangle of glass. If you are among the curious, you asked what it was all about, and were told that you were getting a "routine blood count." That meant nothing to you, so you were back where you began except for the few drops of blood you could not really miss. The outraged ear lobe did not even register a protest by any residual sting. Actually, a mosquito had done more to you many a time. The mosquito jabbed you because he was hungry. With the amount of blood that would be a light lunch for a mosquito, your doctor can learn an amazing amount about your body and its defenses.

That instinct for the truth which is the poet's genius has made blood the symbol of life's mysterious forces since the days of the earliest epics. From the Vikings to Huckleberry Finn, oaths of the most solemn nature were sealed in blood. The bond of common heritage was called the blood and still is in all impassioned speech, although we know that what actually is involved is the far less romantic sounding chromosomes. A thousand and one ideas of splendor and terror cling in our fancies around the very word blood, yet when the doctor pricks our ears, few of us realize what a world of scientific romance he is invoking.

Your blood is a marvelous blending of mysteries on which every organ in your body is absolutely dependent for the food and air to keep it alive and working for you. It is your own private defense system in the never ending "all out" war between you and disease. Actually, that fluid which flows so freely in a troubled world today is almost half solid. About 40 per cent of your blood if you are a woman, 46 per cent if you are a man, is made up of red and white cells. Unlike the stay-at-home cells which carry on the thousands of other tasks in your body, the blood cell is a mobile unit capable of traveling all over you in three minutes.

When your doctor pricked your ear, these blood cells and not the fluid in which they swim were the object of his investigation. He wanted to know whether you have enough or too many of each kind of cell and whether those you have are in good health. Four tests usually tell all he needs to know. The red color of blood is due to the substance called hemoglobin which carries oxygen. If it should fail you would suffocate although your air passages were absolutely clear and you breathed pure oxygen. Then he counts the number of red cells which carry this hemoglobin. Simple arithmetic tells whether each

DROPS of BLOOD



cell is carrying enough of this vital material. In another of the little glass tubes, called pipettes, he mixes your blood with a different fluid so that he can see and count the white blood cells which are your shock troops against invasion by bacteria. On a glass slide he smears a thin film of blood from which he can study the appearance of the individual cells, count the relative number of each kind and see whether they look healthy or not.

Of course, you are interested in knowing how red blooded you are. That is the hemoglobin determination and depends on any one of the ways by which your blood color is matched with a standardized color. The most common way is the direct comparison of your fresh blood with a set of standard colors. The chart used looks much like a set of paint samples in red and pink, with a hole through the center of each color slip. A drop of your blood on a special paper is held up to the light behind this hole and tried from one to the other until the best match is obtained. This is, of course, the quickest and easiest although the least exact way of telling whether you have iron enough for any blitzkrieg your body may have to wage. That red pigment in your blood is made with iron, you know.

Instead of matching against his red paint samples, the doctor might take a drop of your blood between two small slips of glass which clamp together. In a rather elaborate machine he then looks through a tube in which the red of your blood forms half of a colored circle, the other half being from glass of a known redness. A special light is provided so that as the watcher turns a wheel the different reds come up until one is so perfect a match that the line in the center of the circle disappears.

Instead of comparing your blood color in its natural but fading redness, he may draw up a carefully measured amount in a special pipette. This is then carefully mixed with a known amount of acid and allowed to stand until it changes to clear brown. Drop by drop water is added and mixed with this until the column of fluid in the tube of the instrument used matches the tan glass rods on either side. Your hemoglobin is calculated from the dilution used. Because the amount of blood is exactly measured and because the red pigment is changed to the more permanent brown one, this is an accurate method. In some hospitals, especially those connected with medical schools, a still more delicate test is made by matching the tan solution of blood against a known tan in an instrument called, properly, a colorimeter.

These are the usual ways of measuring your hemoglobin. For all ordinary examinations your doctor is most likely to use the direct pairing of red colors because this method tells him whether you are safely within the normal variation or not. If he is giving you medicine to increase the redness of your blood, he may want to use one of the more exact ways of matching his colors so that he can tell just how your body is using that medicine.

If your blood is just as red as it ought to be, your red blood cells are probably going about their business in proper numbers. If you are a bit on the pale side, however, you may have enough cells but they may be lacking in iron. If you are a man you have normally five million red blood cells to one cubic millimeter of your blood. If you are a woman you will have about half a million less. Under the microscope those cells are flat, shiny disks suggestive of coins. They even pile up like stacks of dollars when you look at the undiluted blood. If they were dollars you could pay off the national debt with the few drops which ooze from a razor nick and still be able to rival a Ford or Rockefeller. Only an astronomer would try to figure out a number which would come near to expressing the total population of your red cells. That cubic millimeter with which the doctor works is a small drop indeed, yet to count the cells in it directly would be an impossible task. A part of it in the capillary tube of the red pipette is diluted two hundred times in the bulb at the top. It is thoroughly mixed by shaking so that the cells are evenly distributed before a small drop is run into a counting chamber under the microscope. This chamber is accurately ruled to one four hundredth of a square millimeter. The cells are counted as they lie on these squares and from that count a quick calculation gives the answer.

When your doctor knows how your hemoglobin and red cells compare with normal standards, he is already able to tell a good many things about what is or is not wrong with you. If those two determinations are satisfactory, the various anemias are eliminated and you know you have the right number of healthy oxygen carriers to keep your body breathing.

In another of those queer little pipettes the doctor has taken a bit more blood which he diluted twenty times with a mild acid. This dissolved the red cells to get them out of the way, and made the white cells show up better. That cubic millimeter of blood with its five million red cells contains only from five to ten thousand white cells. These vary in numbers during health according to such simple changes as the eating of a large meal, but they show marked and significant changes in all sorts of infections. These white cells are the first line of defense thrown out by your body against germs or injuries.

Not only is it important to know how many of these blood stream soldiers you have mobilized, it is also important to know what kinds. A microscopically thin layer of your blood is spread across a glass slide and covered with a stain which looks purple but is actually made up of a pink acid dye and a blue alkaline one. The different parts of the cells vary in their power to take up one or the other of these colors.

Let us look into the microscope at the blood smear. Those pink disks are the red cells. Remember that they will outnumber the whites five hundred to one. We look at them briefly because changes in shape and size are important clues to some uncommon diseases. We also notice the scatter- *(Continued on page 918)*

The Fight Against Rheumatic Fever

The greatest danger of rheumatic fever is the effect it may have on the heart

By ARTURO CASTIGLIONI

RHEUMATIC FEVER is one of the most widespread diseases but it is not one of the best known. Its manifestations are varying and are not always characteristic; the word "rheumatic" itself is so frequently used to mean some slight attack of pain in the joint or in the muscles, which seems to be connected with changes in the temperature, that many people have only a vague idea about rheumatism as a disease. Also, in slight cases the patient treats himself and, having recovered some days after the attack, believes that everything is over. Frequently a man with a serious heart disease, when he comes to the doctor is asked if he ever suffered from a rheumatic disease. He may answer, "Once I had some rheumatic pains for about eight days." The beginning of rheumatic fever is sometimes connected with an infectious disease of the throat but the heart attacks do not occur till some time later, so that the patient does not connect the two.

The greatest danger of rheumatic fever is its effect on the heart. The greatest number of cases of heart disease is found among rheumatics. Sometimes it is only a defective heart which reveals the story of an old and forgotten rheumatism. The frequency of heart diseases after rheumatism makes this disease a social problem of vast importance.

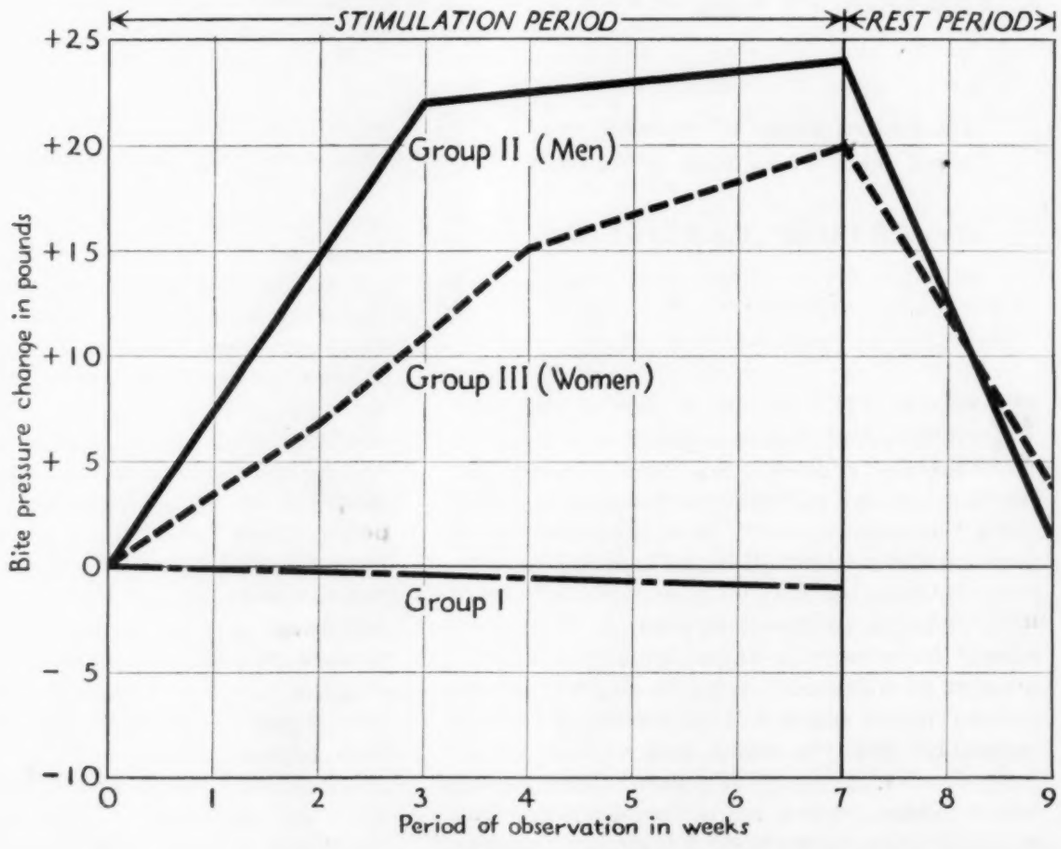
Knowledge of rheumatic fever is far from complete. We know that there is some connection with temperature, a possibility of an infectious origin, and typical characteristics in some forms of its manifestations. In certain regions it is one of the most prevalent diseases and it constitutes from 3 to 7 per cent of all sick persons admitted to large general hospitals in the United States. However, mortality rates for rheumatic fever in the United States show a steady decrease in the last twenty-five years. But its importance may be seen in the fact that it produces a *(Continued on page 916)*

Why We Lose Our Teeth: II

By PETER J. BREKHUS

IT IS OBVIOUS that under present civilized conditions the survival of man is not dependent on his possession of good teeth. The fittest among the human race are difficult to describe, since both the physically and the mentally superior are likely to be wiped out by modern machinery of destruction. But the dentition of civilized man is a matter of little consequence in the sum total of those attributes that make for the survival of a race which appears to be sacrificing its teeth for other advantages. This bartering of nature's gift of teeth for the artificial gifts of civilization has been going on for a long time, if civilization in its broadest sense means man's progressive advance from the status of a superior animal to that of the lord of all creation.

In some respects human dentition has undergone real evolutionary changes. That is, changes have taken place in the germ plasm, affecting the dentition so that heritable changes have appeared in the offspring, and by the process of natural selection these changes have become established in the species. While man's survival was partially dependent on the effectiveness of his teeth, persons who had



This graph indicates how the bite strength of two groups of dental students was influenced by a period of paraffin chewing and a subsequent rest period.

good teeth tended to live longer. Later, those who had skilled and powerful hands were more likely to live long enough to reproduce their kind than were those who may have possessed good teeth but less manual efficiency.

The probable connection between increase of manual skill and deterioration of the teeth is emphasized by several writers on man's evolution. C. S. Simkins says of the ape-man, "There is no evidence that he prepared his food. He ate it wherever it was found or killed. No doubt he did not always eat it fresh. But that matters little now. He ate and prospered, and, what is vastly more important, his hands were free to hold the bones from which he tore the flesh with his teeth. The influence of the hands on the modification of the dentition can hardly be overemphasized. Since the hands were free to be used for offensive or defensive purposes, there was little need for a fighting type of tooth. Man has killed his food. He was a killer from the beginning. But he killed with his hands rather than with his teeth. Hence his dentition suffered changes accordingly."

A. S. Romer suggests that the reduction in the number of teeth which we have already noted in the primates "is probably associated with the early development of the use of the hands as accessory feeding organs." That is, those early man-like creatures that were lucky enough to possess good hands were better adapted to their life conditions and therefore better able to survive and reproduce their kind than were those who possessed good teeth without good hands.

Eventually, the possession of good hands became less important to survival than the possession of a good brain. The man who was intelligent enough to outwit his enemy had a better chance of survival than the dumb brute who could merely tear him to pieces when he encountered him. Today, even the possession of a good brain does not necessarily make for survival, though it may help.

We may be reverting to a state of barbarism in which the machines that make possible our present civilization will be destroyed and the knowledge of their structures and mechanisms lost. Should civilization disappear and a period of savagery ensue, we might expect some concomitant changes in the condition of human teeth. But none of us desire that the possible dental betterment of our race should be bought at such a price, and certainly those who seem bent on the destruction of all that we value most in civilized life are not acting from a desire to restore our dental status to that of primitive savages.

Disuse and Disease

Human dental caries is a disease so obscure in its origins that we do not know what effect, if any, might be expected from increased functioning of the teeth and jaws. It appears probable, however, that better stimulation, resulting in improved blood circulation through the dental pulp and the surrounding tissues of the teeth, would tend to reduce their susceptibility to whatever it may be that causes them to decay. Our chief hope lies in patient and intensive research, and our greatest danger lies in the too ready acceptance of a likely looking etiologic factor before sufficient experimental work has been done.

In the case of pyorrhea, however, it is known that well-exercised gums are less susceptible, and thorough massage of the gums is one of the chief therapeutic measures. It is also fairly well established that when prenatal and postnatal nutrition has been properly taken care of and when the jaws of young children are properly exercised, the danger of malocclusion and crowding of the permanent teeth is minimized. Apparently, there is only a brief period during which we can do anything to make or mar our children's dental future. Before birth we can do nothing beyond providing proper nourishment. We cannot safeguard the embryonic dental band from an injury that may result in malposed or congenitally missing permanent teeth. After the eruption of the permanent teeth, we can only patch up whatever damage may have been done as a result of poor care during prenatal and early postnatal life.

This leaves only a few years to work for the good results that may be expected from proper dental care. During those years—the period of early childhood and of the deciduous dentition—we should encourage the child to exercise his jaws and teeth as much as possible. We cannot promise that this will prevent caries or even do anything to arrest disease, but we do have evidence that it will reduce the common tendency to malocclusion and crowding of permanent teeth in civilized children and that, if continued, it will check the older person's susceptibility to pyorrhea.

While we have not yet perfected experimental technics to show any direct connection between stimulation of the oral tissues and

resistance to dental caries, we have recently demonstrated at the University of Minnesota School of Dentistry that it is possible materially to increase the strength of the human jaw by a moderate amount of exercise during a short period of time. Using as our subjects ninety-two dentistry students, we divided them into two matched groups, the control group to carry on their everyday lives as usual, including their customary diet and whatever candy-eating or gum-chewing they might care to do; the experimental group to do the same, but in addition to chew one half-inch cube of paraffin wax one hour each day for fifty consecutive days. Paraffin wax is a tough substance and is also resistant to the action of saliva.

Before this experiment began, the bite strength of the male and female experimental groups and of the control group was recorded. No significant differences were found. After the assigned period of daily chewing had been completed by the experimental groups, bite strength was tested again. It was now found that the paraffin chewers averaged 23.6 pounds per square inch better than the nonchewers. An increase in bite strength was shown by 87 per cent of the experimental group, although 2 per cent showed decreased strength and the remainder showed no measurable difference. But after two more weeks, during which neither the experimental groups nor the control group chewed any paraffin, the average bite strength of the test groups had dropped back to about the same level as that of the control group. We see, then, that while it may be possible to increase jaw power in a short time by means of added stimulation, the increased power may be lost more rapidly than it was gained.

Possibility of Revising Our Diet

Naturally the question arises whether it would not be possible to maintain stimulation of the jaw muscles by keeping people on a diet that would force them to give their jaws as much exercise as the chewing of paraffin wax necessitated in our experimental group? Theoretically, yes; practically, for several reasons, no.

Meyer Klatsky concludes a paper on this subject with the demand for a radical revision of the culinary art in order to provide more fibrous, hard and bulky foods requiring considerable mastication. But before such counselors could persuade us to throw away our recipe books and sell our cookstoves for scrap iron, numerous members of the medical profession would rise up to warn us against the effects that such a revolution in diet—beneficial, perhaps, to our teeth—would be likely to produce in our digestive systems. Our delicate stomachs and intestines could scarcely be expected to tolerate a sudden change to a diet consisting mainly of tough, fibrous and bulky foods, as many persons who joined the army of the bran eaters a few years ago found out to their dismay. We dare not risk internal havoc for the sake of our teeth. After all, our internal digestive system is indispensable, whereas we can and often do get along without our teeth.

Thus a major physiologic barrier stands in the way of possibly saving our teeth by means of restoring their function. A further and even greater difficulty is a psychologic one. How long would it take for the combined efforts of the medical and dental professions to win the public away from its devotion to modern concentrated foods, even if those professions were sure such a change were desirable? How long would it take to overcome the protests of the manufacturers and advertisers of such foods?

Despite the proved efficacy of vaccination, it has taken a century and a half to sell it to the public, and even now there are thousands of persons who fight for their right to remain unprotected from smallpox, though the means of prevention is simple, inexpensive and of proved worth. How, then, could we except to have much success in educating people to adopt a regimen that would not only disrupt their whole manner of life but that also could not at present be shown to be indubitably effective?

The chewing gum manufacturer or the devotee of his product is likely to suggest that, if chewing strengthens the jaw muscles and probably improves the general condition of the mouth, gum chewing should be the ideal solution. So far as we have been able to observe, however, gum chewing has not strengthened the jaws or improved dental conditions. Persistent gum chewers apparently have no stronger jaws and no better teeth than those who seldom or never chew gum.

Bissell B. Palmer says in a recent book, "There is no experimental basis in support of the claims to the effect that the chewing of gum lowers the incidence of dental decay and dental tartar, or that it helps to prevent irregularities of the teeth or *(Continued on page 924)*

HERE'S A KITCHEN-TESTED RECIPE FOR SOMETHING YOU CAN'T EAT!

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Some Common Signs To Look Out For

The development of painless lumps or other abnormalities in the breast should be regarded with suspicion. Unexplained bleeding is also a danger sign. Unaccountable loss of weight, chronic indigestion, or a "general run down feeling" call for thorough medical examination, too.

When you discover that a mole, wart, scar, skin growth, or blemish is beginning to change in *color* or *size* or *texture,* or to become painful—that *may* mean the start of skin cancer. Open wounds which stubbornly refuse to heal may develop into skin cancer.

Skin cancers, fortunately, are the easiest of all to detect and cure. Most of them, promptly and properly treated, can be cured without causing disfigurement.

Some Dangers To Beware Of

Growths constantly exposed to irritation frequently become cancerous. Amateur razor-blade surgery or medicine-cabinet doctoring of moles and warts often is followed by true cancer.

In the prevention of mouth cancer, bad teeth should be cared for or removed. Jagged edges of teeth should be smoothed. Dental plates and bridges should fit comfortably. A mouth condition known as leukoplakia—"white spot disease"—if untreated, may develop into cancer. The excessive use of tobacco and sharp condiments should be avoided.

Beware of quack remedies and "cures" for any condition which may be cancer. There is just one safe, reassuring thing to do when you notice a suspicious sign or symptom: *have a thorough examination!* To make the most of your best ally—*Time*—have it *right away!*

For further information, send for Metropolitan's free booklet, 111-Z, "A Message of Hope About Cancer."

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Baby's a Busy Body

(Continued from page 889)

ally works in a somewhat haphazard fashion, doing whatever seems like a good idea at the moment. This isn't true of the nurses, who follow a definite routine in everything they do for the baby. Instructions for bathing, for example, specify some twenty steps to be taken in order. The first three or four have to do with setting the stage, making certain that all the necessary supplies are conveniently at hand. This is important; to reach for a cotton wick and come up with the mineral oil would throw the nurse off the pace. Rule number five is an old friend. "Wash hands thoroughly," it says, and "wash thoroughly" in the hospital means just what it says; like "No Smoking" in a powder plant, it's not a rule to be taken lightly. Other instructions blueprint every detail of the baby's bath, from "undress baby and place shirt and band in container" to "use nursery powder for skin irritations and in creases." Not that the nurses have to read the rules as they go along—after a few hundred baths, every movement is habitual; they couldn't forget to "cleanse ears and nose with oiled wick if needed" any more than they could neglect to "take temp. and examine for abrasion or marks of any kind."

The nursery is still going strong long after most families have finished their dinner and tuned out *Beat me, Daddy, Eight to the Bar* for the fifth time. Evening visiting hours, scales, intern's checkup, temperature, supper and finally bed, at about the same time the working folks are turning in themselves. With the baby, though, it's not for good. There's another meal, with the inevitable extracurricular activities, at two o'clock in the morning, and his roommates are likely to be in full cry for some time after that.

It might be considered a soft life, at that, if it weren't for rule fifteen in the general nursery orders. "Change diapers frequently," this rule says. Shakespeare had the right idea. "To paint the lily," he said, "is wasteful and ridiculous excess."

By RUTH COWAN CLOUSE

Essentials of an Adequate Diet: IV

One of the miracles of modern nutritional science is the discovery of the biologic significance of nicotinic acid

ONE OF THE MOST dramatic developments in the science of nutrition in recent years has been the discovery of the dietary importance of nicotinic acid. This once rare substance which for many years was considered as little more than a chemical curiosity was first prepared in 1867 by chemical treatment (oxidation) of nicotine. More recently it has been found to occur naturally in many plant and animal tissues, as well as in the leaves of certain species of the tobacco plant. Because of the similarity in the names of the products many people have gained the erroneous impressions that nicotinic acid has properties similar to those of nicotine and that it can be obtained from tobacco smoke. Neither of these impressions is correct.

The first hint of a possible biologic significance for nicotinic acid was its isolation from yeast concentrate by Casimir Funk in 1912. At that time nutritional investigations were being directed toward the isolation and identification of the substance believed to be capable of preventing or curing the tropical disease of beriberi, the substance which now has been identified as thiamine. Nicotinic acid was found to be inactive in the prevention and cure of beriberi and its biologic properties were not investigated further at that time. Twenty-five years later (1937) nicotinic acid was again isolated from active biologic material—this time from a liver extract which was known to be effective in the cure of blacktongue in dogs. The crystalline material proved to be highly potent in this instance. Since blacktongue is a dietary deficiency disease which is similar in many respects to human pellagra crystalline nicotinic acid was soon used on human subjects—with the dramatically successful results which have made current nutritional history.

Pellagra (literally *rough, red skin*) is a dietary deficiency disease which is common among low income groups in many sections of the Southern United States. It is by no means confined to those regions, however, but may be found in any locality among people living on certain types of restricted diets. It is found among persons of all ages and may attack children as well as adults. The typical diet on which pellagra usually develops in the Southern states is composed chiefly of refined cornmeal, white flour, fat pork containing little or no lean, and some form of syrup, usually cane or sorghum molasses. Such a diet is deficient in more than one dietary factor and, as might be expected, a well balanced diet, adequate in all of the known dietary essentials, is required for the complete control of this disease. Nicotinic acid, however, administered in appropriate amounts under the direction of a competent physician gives immediate and dramatic relief to many of the most prominent and most distressing symptoms of pellagra including the gastro-intestinal disorders and mental confusion and psychoses which frequently are present.

The exact manner in which nicotinic acid functions in the prevention of pellagra is still not fully understood. However, nicotinic acid, like thiamine and riboflavin, is known to form an essential part of certain respiratory enzymes and to play an important role in the oxidation and reduction processes which are essential to the life of every cell. Thus nicotinic acid requirements, like those of thiamine and certain of the other vitamins, are considered to be dependent in part on size and activity.

The Committee on Food and Nutrition of the National Research Council has recommended an allowance of from 15 to 23 milligrams of nicotinic acid for adult diets and from 4 to 12 milligrams in the diets of infants and children of school age. The exact allowances recommended by the Committee are reproduced in table 1. It should be emphasized, however, that sufficient time has not elapsed since the discovery of the physiologic importance of nicotinic acid to permit extensive study of human dietary requirements. For this reason the allowances recommended by the Committee must be considered tentative until more data can be accumulated.

TABLE 1

Standard Allowances for Nicotinic Acid as Recommended by the Committee on Food and Nutrition of the National Research Council

	Nicotinic Acid, Mg.
Man (154 pounds)	
Moderately active	18
Very active	23
Sedentary	15
Woman (123.2 pounds)	
Moderately active	15
Very active	18
Sedentary	12
Pregnancy (latter half)	18
Lactation	23
Children up to 12 years	
Under 1 year	4
1-3 years	6
4-6 years	8
7-9 years	10
10-12 years	12
Children over 12 years	
Girls 13-15 years	14
16-20 years	12
Boys 13-15 years	16
16-20 years	20

Reliable data concerning the nicotinic acid content of foods also

Harvest

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are lacking both because of the time required for the accumulation of such information and because altogether satisfactory methods of assay have not been developed. Enough information has accumulated, however, to warrant the listing of the following tentative values in table 2:

TABLE 2

Nicotinic Acid Content of Average Daily Portions of Some Common Foods

Food	Quantity	Nicotinic Acid, Mg.
Liver	4 ounces	35.5
Veal	4 ounces	16.2
Pork	4 ounces	11.0
Beef	4 ounces	8.4
Raw peanuts	100 grams	13.0
Eggs	1 average	3.3
Milk	1 pint	2.4
Spinach	100 grams	1.7
Cabbage	100 grams	0.3
Apples	100 grams: less than	0.5
Whole wheat bread	6 slices	3.0
Enriched bread	6 slices	2.0
White bread	6 slices	1.7
Corn meal	100 grams	1.0
Wheat germ	1 ounce	1.4
Dried baker's yeast	1 ounce	14.2

From the values given in the table it is apparent that liver, lean meat, milk, eggs and green leafy vegetables such as spinach are among the most important dietary sources of nicotinic acid. Whole cereals, although not exceptionally rich sources, nevertheless may contain more than twice as much nicotinic acid as plain white bread. When white flour is eaten in the quantities in which it is consumed in many districts in which pellagra is prevalent a serious deficiency of nicotinic acid may result. Nicotinic acid therefore now is one of the required ingredients of "enriched" white flour, which must contain from 6.0 to 9.0 milligrams of this vitamin per pound.

Although it is impossible from the data now available to compute the total nicotinic acid content of the diet described in the first article of this series; i. e. a diet consisting of one pint of milk, one egg, six slices of whole wheat bread, four ounces or one fourth pound of beef, one apple and 100 grams or approximately one half cup of cabbage, carrots, orange juice, potato and oatmeal, enough information is available to show that such a diet more than meets the recommended allowance for an average man of sedentary occupation.

On the basis of his practical experience with diets which will pre-

vent or cure pellagra Dr. W. H. Sebrell wrote in 1939: "The most important foods to add to the diet in (or for protection from) pellagra are milk, liver, lean meats, fish, eggs, tomatoes, green peas, and a variety of green and leafy vegetables, such as kale, mustard greens, turnip greens, and collards."

Thus the results of both scientific experiment and practical experience are in close agreement and together provide definite proof that the dietary pattern recommended in the first article of this series (HYGEIA, August 1941, p. 644) can be relied on to provide a diet which is fully adequate in nicotinic acid content.

EQUINE ENCEPHALOMYELITIS

Additional evidence that equine encephalomyelitis, a disease of horses that produces what is sometimes called "sleeping sickness" in man, is transmitted by mosquitoes, is presented in the *New England Journal of Medicine* by V. A. Getting, Boston.

The findings are based on a mosquito survey made in connection with an outbreak of the eastern variety of the disease which appears to be closely related to the western strain. It was found that the geographic distribution and the seasonal prevalence of the disease and the mosquitoes were the same. The biting habits of the insects are such that the hazard of outdoor exposure of man and animals to the mosquitoes is ten times as great as it is of those in buildings. It is pointed out that this would explain the high incidence of the disease among young children, inasmuch as during the summer months infants and children often sleep outdoors, sometimes without protective netting. Moreover, children less than 10 years of age who play outdoors the greater part of the day are less efficient than older groups in protecting themselves against mosquitoes, since they do not react to the buzzing and alighting of a mosquito except when bitten. Of the mosquitoes captured on man outdoors in the survey 60 per cent were vectors (carriers of disease), as compared to only 6 per cent of those caught indoors.

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ASK YOUR DOCTOR ABOUT POSTUM

Food Fads, Fallacies and Facts: IV

By DORIS W. McCRAY

Foods are not "fattening" unless they are eaten in amounts exceeding daily energy requirements.

THE OBESE BUSINESS MAN may remark, "I've just decided to cut out potatoes entirely. I would make a better golf score if I could reduce this belt-line a bit." The stout secretary is apt to say, "Well, I just don't eat bread any more, because it is so fattening, but it does taste good." Still another man confesses that he is leaving "acid fruit" alone, because he has "too much acid in his system." Sugar is said to cause diabetes, and meat to cause Bright's disease. All these statements are partly correct but more incorrect.

A food is not "fattening," unless eaten in excess of daily energy requirements. The body is not restricted to the use of any one foodstuff for the support of any one kind of work, but has great power to convert one nutrient into, or use it in place of, another, and thus utilize its resources. The carbohydrates (starches and sugars), fats and proteins all serve as fuel for the body. The calory is the unit of measurement of fuel value.

When there is more food than needed for energy, it is stored as body fat. When there is not enough food for the daily need, reserve body fat is utilized for energy production. It is just that simple. It is something like putting food in the fruit cellar in time of plenty, then using it later. If you eat one extra potato more than you need today, and you do the same thing tomorrow and the next day, soon you will see a difference in your weight, and in the fit of your clothes.

The same expansion will occur if you continue day after day to eat one piece of bread more than you need, or a piece of pie, a piece of cheese, a serving of meat, or any other similar food. You can become fat without ever touching a potato or a piece of bread, if you eat other foods in amounts which are larger than you need.

When a low calory diet is planned for reducing weight, it cuts down the amount of food that furnishes mainly fat, starch and sugar. This is the logical place to cut down on food. Fruits and vegetables are bulky, they furnish considerable cellulose which helps to fill the stomach without overloading it and they furnish needed minerals and vitamins. The protein foods furnish mainly nitrogen, the distinguishing element that is present in all of the parts (amino acids) of the protein. It is necessary and essential, but there is no advantage in eating excessive amounts.

Fats are an energy food in concentrated form, and carbohydrates are also an energy food, hence they may be safely reduced in the dietary.

Some foods are spoken of as "reducing," such as a coarse bread or gluten bread called "reducing bread," because there is greater bulk and lower caloric value, but this nomenclature is absolutely incorrect. The main value of such bread is its unpalatability; less of it will be eaten. It is tasteless, as compared with ordinary bread, homemade rolls and biscuits.

People who are trying to reduce weight are sometimes told to drink less water. It is better not to drink huge amounts of water with meals. Drink moderate amounts of water at mealtime and between meals.

So many factors influence bodily weight, that it is not wise to attempt

any reducing diet without first consulting your physician. But you can discontinue eating between meals and eating exceptionally large meals.

The Hollywood eighteen day diet was a typical faddism. It was not based on sound principles; the results could have been and were sometimes dangerous. Many people should not undertake any weight reduction.

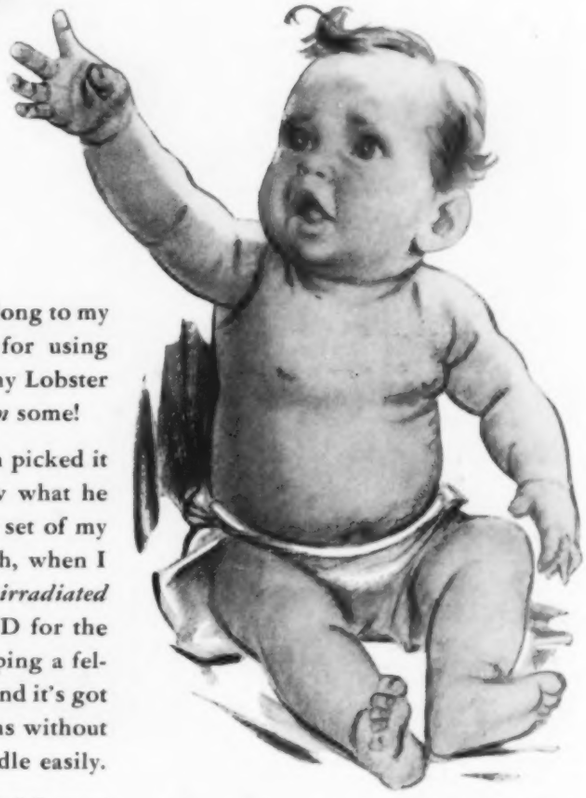
Many fallacies prevail about weight reduction. All kinds of diet and health courses, pamphlets and get-thin-by-mail inducements are offered; just pay your money and lose your fat! There are medicines, epsom salts, sweat baths, ointments and soaps, and courses of massage offered by charlatans and quacks.

One of the most dangerous ways to reduce is by starvation. Fasting has been practiced since the beginning of civilization. During starvation, the personal appearance suffers greatly, the skin becomes wrinkled and dry instead of normally plump with a layer of fat just beneath the skin, the breath is bad, and the person does not feel well. For all ordinary purposes, it is far better to reduce the food intake slightly and to abstain from pastries, candies or sweets. Eat foods to supply all the normal requirements of vitamins, minerals, proteins and total calories.

Outstanding news in nutrition about 1900 related to the "man in the copper box"; that is, to the experiments with the respiration calorimeter. As a result of these experiments it became possible to compute the caloric value of foods. Early books made calory counting as simple as arithmetic. In those days one read such statements as "tomatoes are largely water and of little value." This was before intensive study of minerals, and advanced work on vitamins. In those days, apple sauce, fruit preserves and jellies were valued chiefly because they added color and variety to the meals, and provided a contrast in flavor.

"Too much acid in the system" used to be a common expression. It was supposed to be a cause of neuritis, aching joints, soreness of muscles, rheumatism and various ills. Presumably too much acid was caused by eating acid fruits. However, this belief is incorrect in the various details. So-called "acid fruits" or sour-tasting fruits are

"Hey, don't take my Carnation away!"



What if I *am* getting along to my first birthday? I'm all for using Carnation right up to my Lobster Newburg days—and *then* some!

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good food for normal persons. Fruits should be eaten in a mixed diet together with bread, cereal, vegetables, meat and dairy products. Fruits are valued especially for minerals needed in the body for building teeth and tissues. Actually their effects are the opposite of acid and they help to maintain the normal alkalinity of the blood.

As late as 1927, one could read quack books, which included statements such as "Young white turnips, when eaten raw, neutralize uric acid." The statement is incorrect. Another book, published with entire disregard for any facts available at the time said: "Rhubarb will purify the blood." "The nervous person should eliminate from the diet all acids, sweets, flesh foods and stimulating beverages." "The correct menu will prevent sunstroke." "Celery acts freely on the kidneys and is often prescribed for neuralgia." "The bitters which cucumbers contain are blood cleansers and therefore clear the complexion." "Cooked turnips are recommended as an excellent food for dyspeptics." "Parsley is more valuable than celery as a nerve and blood aid." "Rhubarb has tonic qualities as well as purifying the blood."

However, turnips, eaten raw, must first be digested, they are then absorbed and they serve in the same capacity as any other food; namely, to provide material for energy, for building tissues and regulating bodily processes. Turnips have no opportunity to be converted directly into a certain acid.

A food does not "purify" the blood, nor does it "enrich" or "thin" the blood. Food furnishes material to the body from which to build its own red blood corpuscles, white corpuscles and all else that is needed.

A most remarkable "Brainy Diet Series" is also an amazing bit of fiction, yet not so harmless as fiction, for it could be taken in great seriousness. The author said, "To the weak, toothless, old, overworked, worried and diseased, I recommend the elixir of life, the white of eggs, an excellent nerve food." One might comment that, being overworked, one might prefer the elixir in a light, fluffy angel food cake. For rejuvenating, the author also fallaciously recommends "strawberries, gooseberries,

all other berries, good eating apples, soft pears, green grapes and green figs."

Alleged self cure by diet is nothing new. When you get a diet out of a book, or by mail, you are in even a more serious predicament than you would be with a pair of mail-order shoes. You can tell whether the shoes hurt your feet, but you cannot tell what damage will be done by the diet.

Next month: food superstitions, inaccuracies and misunderstandings.

DUST IN HOSPITALS

The dust-borne bacteria in a hospital ward were reduced by treating the bedclothes and floor with liquid petrolatum, whereas it was not significantly reduced by the oiling of the floor alone, M. van den Ende and E. T. C. Spooner report in the English medical journal, *Lancet*. They say the study suggests the advisability of further research and the devising of suitable methods of applying liquid petrolatum to bedding. Their findings were made from a comparison of plates exposed before and after the bedclothes and the floor of a women's ward were treated with liquid petrolatum. They point out that the application of oil from solution in white spirit is at present not a practicable procedure in hospital laundries, thus their suggestion of the advisability of further research.

HEPARIN AND SULFATHIAZOLE FOR RARE DISEASE

The combined use of heparin, a recently discovered anticoagulant, and sulfathiazole proved effective in the treatment of a case of cavernous sinus thrombosis, a comparatively rare but highly fatal condition involving a clot in a large blood cavity back of the eye next to the brain, Irving L. Ershler and Irl H. Blaisdell, Syracuse, N. Y., report in *The Journal of the American Medical Association*. Their experience in this case, however, shows that extreme caution must be exercised in the use of heparin because of the possibilities of dangerous bleeding in vital areas within the body.

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A favorite . . . yes, indeed! Just ask anyone of the millions who welcome a glass of this true juice of sun-ripened Hawaiian pineapples the first thing in the morning—who know how appetizing it is before lunch or dinner—who enjoy its refreshing goodness *anytime* during the day.

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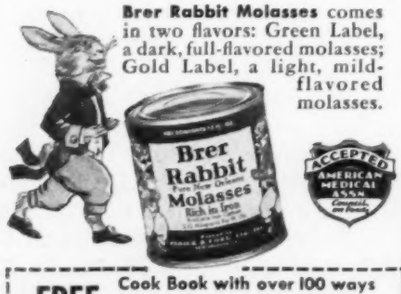

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INFANTILE PARALYSIS AND TONSIL OPERATIONS

Further evidence of the possible relationship between tonsil operations and infantile paralysis is contained in a report in *The Journal of the American Medical Association* by Carl E. Krill, Akron, Ohio, and John A. Toomey, Cleveland, of a recent Akron tragedy.

"Five of six children," the authors say, "aged 11, 9, 8, 7 and 6 years, had a tonsillectomy and adenoidectomy [surgical removal of the tonsils and adenoids] on August 22. The operations were done under general anesthesia and under the strictest of aseptic [sterile] precautions in a clinic, and the children went home the same day in good condition. Three of the children began to show symptoms of poliomyelitis [infantile paralysis] on September 3. One child probably started to have symptoms on the third and another on the fifth of September. All the symptoms were referred to the gastrointestinal tract . . . by September 7 all 5 had bulbar [affecting the respiratory muscles] poliomyelitis. . . . One child died at 6:30 a. m. and 1 at 3:30 p. m. on September 8; a third died at 11:30 a. m. on September 9. One child appears as though he should get better, but the other is still seriously ill.

"The parents and the child of the family who was not operated on, who is the youngest of the children and 2½ years of age, have had no symptoms of the disease."

The Fight Against Rheumatic Fever

(*Continued from page 903*)

high degree of chronic illness. The frequency of rheumatic heart diseases is shown by the statistics of examinations of adult groups. For example, examinations of men drafted for military service show that between the ages of 18 and 25 cases of rheumatic heart disease in the population of some towns may be over 2 per cent.

We know from statistics of the disease that, although widespread throughout the world, it seems to be less frequent and less severe in the tropics than in the temperate climates. Hospital statistics in North America record a greater frequency in the Northern and Middle Atlantic states and in Canada than in the Southern and Middle Western states. However, great differences occur from year to year. But contrary to what is generally believed, cold weather does not seem to be a particular factor in causing it, because rheumatic fever is rare in the Arctic regions. The greatest danger seems to exist in regions and at times when cold is coupled with dampness. The greatest number of acute attacks of rheumatic fever occur in the coldest and wettest months of the year, and in some regions of the United States a great frequency is found in the late winter and the early spring months. Rheumatic fever is more prevalent in industrial and urban populations than in rural ones; poverty and its consequences seem to furnish a favorable soil for its development. In England it is twenty or thirty times more frequent among the poor children of industrial towns than among children of the well-to-do. American hospital statistics also show that rheumatic fever is more frequent among patients of English, Irish and Italian extraction, but the rea-

son is not clear. Frequently, it is found in families in which the parents have suffered from rheumatic fever, and it is generally admitted that the disease is twice as frequent among the so-called rheumatic families than among others, and always more frequent among children and young adults. In the latest statistics for New York, 98.5 per cent of the attacks occurred before the age of 15.

The role of micro-organisms in the origin of the disease is not yet clear, but a germ of the streptococcus type is thought to play an important role, since it is often found in the infectious diseases of the throat and the mouth which precede the attack of rheumatic fever. A tooth socket which is discharging pus into the mouth may have a harmful effect on the membranes of the alimentary tract and gastrointestinal disorders and faulty elimination may be of some importance in causing rheumatic diseases. Some years ago, too, much importance was attached to infections starting in the roots of the teeth, but recent studies have shown that with proper treatment of the teeth and without radical measures it is possible to restore normal conditions.

Is it possible to prevent the recurrence of attacks, which are detrimental to the heart and are the most dangerous characteristics of this disease? Some important observations have been carried on.

Thomas, France and Reichmann in Baltimore, and Coburn and Moon in New York have tried sulfanilamide on several groups of patients who have suffered from rheumatic infections. The patients were divided into two groups; to one of these sulfanilamide was continuously administered throughout the winter months, while the other group had no special treatment. Nutrition, housing and general conditions were not appreciably different in the two groups.

This treatment gave results which seem to be encouraging, especially since it was conducted with the greatest attention and with the most careful observation of all possible factors. The Baltimore physicians, who conducted their experiments on more than one hundred and fifty patients over a period of four years, record that not one of the patients who received sulfanilamide had a rheumatic fever attack, while almost all of the others had many attacks, sometimes so severe that they had to be hospitalized.

Knowing that infections of the throat can often be the origin of rheumatic relapses, the investigators believe that by preventing the infections of the throat it would be possible to avoid the recurrence of rheumatic attacks; and knowing that sulfanilamide aids in the destruction of the agent of throat infections, all rheumatic subjects were given small daily doses of the drug from October to July, that is during the period in which infections of the throat are most frequent. The results thus far obtained show an encouraging picture. If more experiments should confirm the judgment of the initiators, a new success will be added to the triumphal series of benefits obtained by sulfanilamide and its derivatives. Up to now, early and long rest in bed and the use of drugs derived from salicylic acid are the mainstays in the treatment of rheumatic fever.

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PLEASE MENTION HYGEIA
WHEN
WRITING ADVERTISERS

A Few Drops of Blood

(Continued from page 902)

ing of small, blue staining platelets which are important for the proper clotting of blood. Without them you could bleed to death from a slight injury. Although the smallest of your blood stream soldiers, they are stout defenders, engineering troops which quickly repair with a clot any breech in your body walls.

The white cells, leukocytes, are our chief concern however. In contrast to the reds, each of these has a deep blue staining central part called a nucleus which is surrounded by a lighter staining part called cytoplasm. See that big fellow down there with the nucleus like a crescent of three sausage links. He has a cytoplasm which looks as if it had been dusted with fine purple sand. Next to him is another in the same uniform. These have a name harder on the tongue than a Balkan war map. They are polymorphonuclear leukocytes and we nickname them PMNs. These are the cells which attack invading germs and literally gobble them up. They may be likened to a suicide squad because the bacteria they swallow usually kill them in the process. What we call pus is the remains of literally billions of PMNs which have died in your defense. In health they are about 60 to 65 per cent of your white cells.

We move the slide along. Here is one that looks just like a PMN except that the nucleus instead of being in little links is like one long sausage curled to fit the cell. This is a stab or band form and really is a PMN which is not fully grown. In health you will have only three to five of these in a hundred, but let appendicitis, for example, or some other sudden infection strike at you and out come the stabs from their place of origin in your bone marrow. When your total white count and your PMNs and your stab cells all show increased numbers we know surely that a big battle is going on in your body somewhere.

See that one down there with the round blue nucleus and just a little sky blue cytoplasm to one side. He is a lymphocyte. Normally his kind make up between 25 and 35 per cent of your white count. Lymphocytes live in enormous numbers in your tonsils and in the lymph glands scattered over your body. They fight differently than do the PMNs. They surround the enemy and wall him in. Certain of the most vicious invaders, such as the tuberculosis germ, are too tough for the PMNs. Then the lymphocytes come along and build a wall to imprison the still living tubercle bacillus.

Here is a gay looking fellow all dressed up in red like the King's Guard. His nucleus is like that of his brother PMN but his cytoplasm is dotted with large bright red granules. He is called an eosinophil. Ordinarily, he is a rare member of your defense force, only 2 to 4 per cent. But let some form of invader larger than bacteria, some microscopic dragon like the trichina worm that infests pork for instance, attack you and out come the guardsmen in enormous numbers.

Injury or disease may declare war on you at any time. Then the doctor is your big ally ready to help you repel the invader with every force at your and his command. You feel sick and miserable. Why does he add to your troubles by jabbing you in the ear? What can those few drops of blood tell? Like a good general your doctor is inspecting his forces before planning his campaign. In those few drops of blood he is reviewing your shock troops in action.

"COLD SORES" AND CANKER SORES

The virus of herpes simplex [so-called "cold sores" or fever blisters] is chiefly responsible for acute infectious gingivostomatitis, a condition involving inflammation of the membrane lining of the mouth, often called canker sores, T. F. McNair Scott, Alex J. Steigman and John H. Convey, Philadelphia, report in *The Journal of the American Medical Association.*

NEW AMERICAN ARMY SHOULD BE HEALTHIER

Unless some new cause of death occurs to weight the index unfavorably, the new Army should have a far lower death rate record from disease than did the American Army in the last World War, O. H. Perry Pepper, Philadelphia, chairman of the Committee on Medicine of the National Research Council, declares in *War Medicine*.

His prediction is predicated on his study of the statistics of diseases in the American Army during the last World War and an analysis of present day knowledge of how to more effectively prevent, diagnose and treat these diseases.

"In the group of 2,235,389 enlisted men and officers in the Army in the United States (including Alaska) during the thirty-three months from April 1, 1917 to Dec. 31, 1919, there occurred from disease (exclusive of injuries, etc.) 34,858 deaths, or 15.59 deaths per thousand," he states.

The chief causes of these deaths rank as follows: influenza, lobar pneumonia, bronchopneumonia, measles, tuberculosis and meningococcic meningitis (inflammation of the membrane enveloping the brain and spinal cord caused by a certain type of minute organism). These six diseases caused about 88 per cent of the deaths and he believes that their toll in the new Army should be materially reduced because of the advances made by medical science during the past twenty years.

The number of deaths due to influenza was almost three times that of the second ranking cause of death in this list. This is due, of course, to the pandemic of influenza which swept the world in 1918. It is pointed out that there is no proved method of preventing influenza as yet, but there is also no certainty that a serious pandemic of the disease will occur during the period of mobilization. There is also some hope in the wide incidence of mild influenza which has already occurred in that it may be a deterrent to a serious outbreak of the disease due to the same strain of virus.

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One more day of youth is done.
But the woman will glow, reflecting so
These years in the kindly sun.

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QUESTIONS AND *Answers*

Syphilis and Pregnancy

To the Editor:—A girl was married in the spring of 1940, at which time the state required a blood test which was negative.

She has suffered from hayfever for a number of years and has, for the last six years, received injections on the average of one every four weeks.

She became pregnant and on consulting her obstetrician was asked whether she wished a blood test. The doctor, after examining her, said that he could find no reasons to expect any positive results but he always urged a blood test.

At this time a series of tests were made with the following results: The Kahn was negative; the Kline was positive; the Wassermann was negative in part but was positive one plus in the alcoholic. The doctor followed this with a series of tests which grew more positive as pregnancy advanced. A series was then made on the husband with the result that all of his were negative.

Treatment for syphilis was begun in the girl. As far as was known she never encountered or contacted any one with syphilis and had none of the symptoms.

In spite of continuous treatment during pregnancy, the results climbed to four plus in the Wassermann and correspondingly in the other tests.

The baby was born at the normal time and the first test made on the mother was negative. The baby has had two tests with negative results.

Some of the doctors seem to think there were other factors present during pregnancy to influence the tests. All have agreed that there is no indication of localization. In spite of sexual intercourse during the entire period, even before treatment was begun, her husband never contracted syphilis.

Could there be any connection between the antigen given for hayfever and the blood test results during pregnancy? Or could there be other factors to influence false positives during the nine months?

C. N., Illinois.

Answer.—It is not common to find that all the blood tests have increased from negative to strong positive during pregnancy and then return to negative following the the birth of the baby. Occasionally, however, certain serologic (blood) tests will be found to become weakly positive during the pregnancy and remain so while the mother's milk supply is sufficient to feed the baby and then return to negative as the breasts dry up.

From the data presented it would appear that the patient may not have syphilis and the positive tests reported would be classed as biologic false positives. Such reports were occasionally obtained in the past when the serologic technics were not as refined as they are today, but with the introduction of the so-called flocculation and precipitation tests the biologic false positive reactions are encountered more frequently. These reactions are due to the fact that the newer tests are more sensitive and thus give a higher incidence of positive reactions in known syphilitics and at the same time will on rare occasions give a false positive test in a person who does not have the disease as may be the case here. Such reactions are not common enough to offer sufficient reason to condemn these tests, but they have stimulated the scientists to continue further in an intensive campaign their research work with the substance known as the antigen. Many years of effort have been expended in trying to determine the exact nature of the antigen and why it must be present to produce a positive serologic test. Likewise, investigations are under way to determine why certain people who do not have syphilis will at certain times and as the result of various types of infections develop in their blood a substance which must be similar to the syphilitic antigen because it produces at times the same type of reaction as obtained in patients with syphilis. The antigen used in treating hayfever has not been found to produce biologic false positive tests, and the fact that here the tests became completely negative after the birth of the baby suggests that the positive reactions probably were due to the pregnancy. The actual explanation of the biologic false positive serologic test cannot be given until there is available more accurate knowledge about the antigen.

Contact Lenses

To the Editor:—Do any governmental agencies, such as the F. B. I., Treasury Dept., Army Air Corps, Navy Air Corps, etc., permit the use of contact lenses by applicants for employment or employees in positions where a minimum visual acuity is required of the applicant "without glasses," and where such applicant or employee does not meet the visual requirements "without glasses," but *does* meet them with contact lenses? I am informed that T. W. A. airlines in this country permits their pilots to wear contact lenses, although it bars the use of ordinary glasses —and that is also true of the R. C. A. F. and the R. A. F. of Great Britain.

H. S., Ohio.

Answer.—As far as can be ascertained there has not been any official ruling by any of the Government Services about the use of contact glasses to improve vision to a point that will meet requirements. But it is certain that the matter will come to official notice soon and it is probable that a person without too great an error of refraction may be permitted to take the visual

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If you have ever visited a hospital, you have probably seen, in the corridors or at the bedside of patients, young doctors dressed in white. These men are interns—the physicians of tomorrow.

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Under the direction of mature physicians he perfected his skills and polished his techniques; he became proficient in the diagnosis and treatment of disease. But even more, he heeded the counsel and absorbed the teachings of these older doctors, wise in the experience of years. From them he learned to translate the science of medicine into healing; to interpret his knowledge of medicine in terms of actual people. All this awakened in him a fuller conception of his profession, a keener realization of the responsibilities he was about to assume in the relief and treatment of pain and illness.

What your doctor learned and experienced during his years of internship serves as a solid foundation for what he knows today, further qualifying him as one to whom you can with confidence entrust your problems of health.

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examination with proper contact glasses, provided he can prove that the glasses can be worn with comfort for a minimum period of four hours and with resultant normal vision.

Reducing

To the Editor:—How can I lose weight? I am 150 pounds overweight and would like to lose approximately 200 pounds.

A. D. B., Nebraska.

Answer.—If you propose to lose 200 pounds, you must face the prospect of a difficult and tedious job but at the same time you can also be assured that in all probability you can do it if you have the determination and if your doctor finds you in physical condition to stand the treatment which will be necessary in order to lose so much weight. You cannot do it quickly and safely. You cannot do it easily.

You are undertaking a step of great importance which can be accomplished safely and with a minimum of discomfort under medical supervision, but which could easily prove disastrous if you treated it without your doctor's advice.

Mental Hygiene

To the Editor:—Do infections ever produce symptoms which may be mistaken for acute melancholia? May a mental condition diagnosed as acute melancholia be caused solely by an infection?

L. M., Maryland.

Answer.—Infections may produce symptoms which simulate closely an acute melancholia in one who is predisposed. Ordinarily, such infections do not produce mental symptoms, but may in some cases act as a contributing factor.

Pigmentation of Eyes and Hair

To the Editor:—My baby is 4½ months old. At birth, her eyes were blue and they remained this color until about two months ago. Then one eye turned brown while the other developed a wedge of brown but otherwise remained blue. At birth, her hair was dark brown except for a streak of silver at the top. Now the dark hair is lighter and the streak is almost a blonde shade.

Whether the following has any bearing on the case I do not know

but because of the existence of a rectal fistula a strong solution was constantly used at the time of birth and the baby's eyes were closed for many days beyond normal after birth.

Would you give me some information on this subject?

S. F. H., Illinois.

Answer.—The eye condition which you describe in your baby is a developmental peculiarity that has been observed several times. The treatment with a strong solution soon after birth could have had nothing to do with its production. Eye color cannot be readily changed by any external means or by internal medication. There is nothing that can be done about it, therefore, but it will probably not result in a serious disfigurement.

The streak of light hair is in much the same case, but of course it could be concealed by using an appropriate hair dye if thought desirable.

Raw Meat in Children's Diet

To the Editor:—What are your findings as to the use of raw meat in the diet of children? My boy is 11 years old and has had asthma constantly since infancy. I was told that the boy is suffering from secondary anemia. He is allergic to dust, eggs, wheat, etc. Treatment prescribed for him includes vitamins A and B, iron, raw meats, and raw liver. My physician questions the advisability of the use of raw meat and liver and so do I.

A. O., California.

Answer.—The raw meat and liver seem to have been prescribed because of secondary anemia. For such a purpose the raw products have no advantage over the cooked products. Neither the quantity nor the availability of the iron is reduced by cooking. Cooking does not affect the antianemia factor of liver. If the meat products are given because of the vitamin B content, proper cooking does not reduce greatly the quantity of this material.

The cooking of meat has certain advantages. It is a protection against various parasites that occur in meat, especially in pork. For most people, raw meat is not appetizing. The eating of raw meat

(Continued on page 927)

An

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Does Your Job Depend on Hearing?

(Continued from page 897)

offset." The person who is hard of hearing must compensate for his defect with greater care, conscientiousness and skill than would be necessary if his hearing was normal. Otherwise, his chances for promotion are not as good as for the normal person.

Would you hesitate to employ one palpably deaf? The majority of employers, 28, answered this question definitely in the affirmative, while only 4 unequivocably said "No." There were some interesting comments to this question. One employer said, "Generally speaking, yes, unless the prospective employee possessed more than normal qualifications along other lines, i. e. specialized training or achievements of one sort or another." Another said, "We have employed people who are actually deaf for some types of operations. Such people as inspectors on finished goods do not necessarily have to have good hearing, although they should be intelligent." Still another writes, "Not if it did not materially interfere with his work. At present we have three men in our organization who use ear phones, and also two others who are totally deaf."

Even in the heavy industries the consensus among employers seems to be that there are certain types of work which the person who is deaf or hard of hearing can do well and efficiently, work which is more or less individualized and does not necessitate working in a crew of men, work which does not subject the handicapped person to hazard by reason of moving machinery. It seems apparent that employers are willing to place these handicapped persons, if they can do so without endangering the quality of their output or the speed of their production, and especially so if the handicapped person has some special training or skill.

In regard to employer's ratings as to the occupational success of the deaf and the hard of hearing, the report of the United States Department of the Interior Bulletin No. 13 is interesting. These ratings were under four different headings as follows:

	Per cent
Succeeding very well...	54.1
Succeeding fairly well..	32.0
Getting by.....	11.2
Failing	2.7

There did not seem to be much difference in these efficiency ratings depending on the preliminary education although the percentage of those succeeding very well, or fairly well, was certainly higher in those with high school and college education, and the percentage of these two gradings was also definitely higher among those with special trade training obtained in public schools, high schools and schools for the deaf than where no such training had been followed.

With the exception of a few special trades, such as telephone operators, stenographers, proofreaders and salesmanship, there is no kind of work which the person who is hard of hearing cannot do and do well if he approximates his psychologic attitude to the normal, if he compensates for his defect with lip reading and hearing aids, if he makes himself just a little bit more efficient than his fellow, and if he is sober, industrious and honest. Industry will not employ him because of his defect, but in spite of it.

Why We Lose Our Teeth

(Continued from page 906)

that it helps to develop beauty of contour in the face, or that it compensates the effects of masticating soft foods." Ordinary gum does not require anything like the amount of chewing necessary in the case of paraffin wax, for instance. And gum, after a few moments in the warm and moist environment of the human mouth, is reduced to a soft mass that provides no more stimulation for the jaws than a leisurely walk in the park does for a woman who is try-

ing to reduce her hips by what she calls exercise.

If we do eventually find, as we hope we may, that increased functioning can arrest our present tendency to dental disease, we shall then have to devise some means, acceptable both physiologically and psychologically, for applying such stimulation to hundreds of millions of civilized jaws. Since such a program seems unlikely to go into effect within the life of the present generation, we must look for some substitute for restored function.

In other words, we have to accept the fact that it is apparently impossible to restore the function of the teeth in civilized human beings, and so we are trying to get around the difficulty. We are hopeful of finding some day a roundabout way of saving teeth, even as physicians today save their diabetic and tuberculous patients. Although they cannot cure diabetes mellitus, they can keep patients alive and comfortable by giving them insulin and restricting their diet. Although no way has been found of killing the tubercle bacilli lodged in human lung tissue, it is possible to prevent the bacilli from spreading by walling off the infected area and thus to arrest the disease.

Perhaps some nutritional or immunologic factor will be discovered through which we can counteract the ravages of dental deterioration. At present, however, there is no such treatment that we dare to depend on. No matter how assiduously we observe the rules of dental hygiene, no matter how careful we are to eat the foods prescribed for maintaining general health, it is to the skilled dentist that we must finally appeal if we wish to save our teeth.

This is not to say that we advise any one to cease brushing his teeth or eating nutritious meals. The men who demonstrated that personal cleanliness and sanitation had nothing to do with the incidence of yellow fever were glad enough to bathe and move into clean quarters as soon as they finished their heroic experiment. By all means let us continue to keep our mouths clean and our bodies well nourished, but let us not delude ourselves that by so doing we can keep our teeth free from disease and avoid our periodic visits to the dentist.

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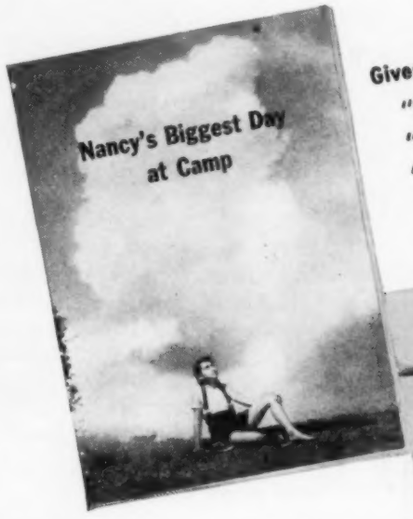

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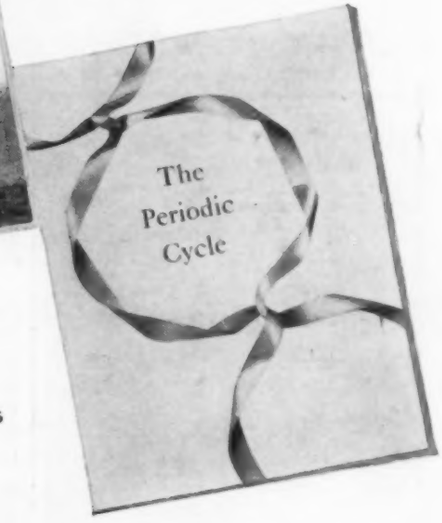

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The Spark of Genius

(*Continued from page 894*)

an aggressive, cock-sure streak and a pleasant personality will earn double, and more, than his brainy cousin. Few corporations have brainy presidents or chairmen of the board. The average 40 year old man has one chance in 2,000 of getting into "Who's Who," while the brainy man has about a 30 times better chance. "Who's Who" recognition does not buy crêpe suzettes, however.

Are brainy people skilled with their hands?

Seldom. Brainy people are not awkward, but they are definitely below par in hand skills, whether in machine shops or at embroidery. This may largely be due to the fact that they are more interested in using their heads than their hands.

Are brainy people popular?

Rarely. The average person feels uncomfortable, often to the point of revulsion, about a brainy person. Brainy people, who do not want to be increasingly unhappy, need to learn to be regular folks, and to have some commonplace interests. In a democracy, this unpopularity unfortunately works against a brainy candidate and puts into office many who are less capable than the defeated one. There are many consolations for not having too much brain power.

Will intellectual thoughts make an unborn child brainy?

No. Many pregnant mothers have rigorously read deep books, attended learned lectures, in the expectation that these intellectual thoughts would make the unborn child brainy. There is nothing a mother can do before birth to affect the brain power of the child. The methods used in the raising, and educating of the child after birth can help—or injure—the brain power, and it is not as simple as reading a few profound books or attending lectures given by wise gray beards.

Are brainy people likely to be one-sided?

No. Musicians and artists may be one-sided, but brainy people are not. The brainy person is usually a good all around person in his, or her, abilities. The successful specialist is likely to be a person of average brain power who has made capital of some special knack.

Do brainy people avoid athletics?

No. Brainy young people are much more active in athletics than other people, but they are not as apt to gain places on school teams because they are small, since they are younger. Brainy people, not only have stronger bodies on the average, but they also enjoy participating in the rough and tumble exercise. They also know enough to quit when the quitting is good. Consider Gene Tunney.

Do brainy people have weak eyes?

Yes. The notion that a young person who is wearing thick glasses is a genius is one popular picture which is approximately correct. Although brainy people are not frail and sickly, and do have better hearing, they are more likely to need glasses. The reason for this is not understood, but is attributed to the great amount of reading and close eye work which they liked to do, even before they started school.

Do the brainy die young?

No. Brainy children have less sickness, better health in general, and live to be older adults.

QUESTIONS and ANSWERS

(Continued from page 923)

under compulsion may have the effect of reducing the total food eaten. Meat protein altered by cooking presumably is less allergenic than the unchanged protein, and therefore, may be preferable for an allergic person.

Since the anemia is of the secondary type, liver serves largely as a change in the meat portion of the diet. The boy is receiving vitamin B and iron in addition to his diet; consequently, the meat products are unnecessary for the purpose of supplying these materials.

Acuteness of Taste

To the Editor:—Is the sense of taste keener in a child than in an adult?

A. J. W., New York.

Answer.—It is doubtful that the sense of taste is any keener in a child than in an adult. What we ordinarily mean by the sense of taste not only involves stimulation of the taste buds located in the mouth, mainly at the tip and sides and base of the tongue, but also the simultaneous stimulation of olfactory sensory organs of smell located in the nasal regions. Both of these types of sensory organs respond to substances in solution either in the mouth or moist lining of the nasal passages, and these two are often called the chemical senses for this reason.

A strict analysis of the gustatory sense organs or taste buds in the mouth shows that they are responsive to four primary types of stimuli—sweet, sour, salt and bitter—or various combinations of these. The tip of the tongue appears to be more sensitive to sweet or to salty substances than other regions, while the sour taste is more easily detected on the borders of the tongue, and the bitter taste more easily aroused at the back of the tongue. The sensitivity to these various primary tastes is not the same. The minimum concentrations of the following substances necessary to evoke corresponding sensations illustrates this point: Cane sugar (sweet) 1 part in 200; table salt (salty) 1 part in 400; hydrochloric acid (acid) 1 part in 15,000; and quinine (bitter) 1 part in 2,000,000. The sense of smell is many thousand times more acute,

(Continued on page 931)

Fall In!

Fashions bespeak the times. We are facing a winter of drastically changing events . an intense time, a time of great national activity. Fashions are now following the trend of American ideals and sympathies: tweeds for the British; vivid colors and rhythmic skirts for our South American neighbors; even Chinese tunics and Russian flares. The army, navy, and air corps take their part in fashion with jaunty hats and braids and insignia. There is gayety despite the war clouds . . . the tone of fashion is high-pitched. Makeup alone holds to its own; for to be lovely your complexion must look natural. And that means that your beauty aids should be selected to suit your individual needs. . . . *Fall in* with the fashions of the day, but keep your cosmetics in harmony with your own claims to loveliness—your individuality. A lovely complexion is a compliment to any fashion.

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Personality and Social Hygiene

(Continued from page 883)

deferred value ever to be realized. Let us use an analogy. Suppose we place a dozen blocks in a row with a space between each. Then let us cover each of these spaces with other blocks and then cover their spaces with still other blocks until we have a structure that is crowned with a single block. Let that topmost block stand for marriage. For marriage to be sturdy and to stand, each of the other blocks has to fit into place and any one that is out of line is apt to weaken the structure.

If we, by word and example, can let youth see that marriage is a goal that cannot be purchased at a small price, that chastity is not a dead virtue and that the good life is not without compensation, we will have started youth on the way that is safe for young feet. A college student recently read Butler's "The Way of All Flesh" and was confused about the episode depicting Ernest's invasion of Miss Maitland's room. Because from babyhood his parents had answered his questions honestly and adequately, he went to his mother to discuss Ernest's behavior. Should a young man wait for marriage? She shared with him her convictions in this matter. She did not preach but treated him as a reasoning creature. When he had enough, he changed the subject. She assured him that both she and his father were ready to help him think through such problems but that they would wait for him to bring these to them. She was a wise mother but she was wisest of all when she did not try to continue the discussion or to reopen it. She is anxious to know what his conclusion will be but she does not let her son sense this.

L. K. Frank, paraphrasing an idea previously expressed by James S. Plant, says that the best preparation for marriage is "learning to meet the immediate human relationships of the students in high school and college, rather than any precocious coaching in marital adjustment."

A study of adolescent needs as expressed in their written wishes shows that they desire material possessions, adventures, play, thrills and personal success. The mental hygienist, the parent and the teacher should see that youth has an opportunity to own, to adventure, to play, to thrill and to succeed in wholesome ways that will be sex releasing rather than sex stimulating. The child from a wealthy family can secure these desires with greater ease than can the poor child. The desires are no respecter of socio-economic state and they are as potent factors with the poor as with the rich. The poor child, however, has to be ingenious in order to secure satisfaction.

To illustrate this point, John, the son of the local banker, satisfies his love of adventure by taking interesting trips and by enrolling in summer camps under well-trained supervisors. Sam, son of the village ne'er-do-well, steals a car to take his girl for a ride and because of his lack of experience in driving wrecks the car and kills his companion.

As another example, Mary, the daughter of the local banker, is eager for personal success. Her money, her home and her family attract many young people. She is good at sports because she has good equipment and she has had good instruction. On the other hand, Emma, the daughter of the ne'er-do-well, is ashamed of her home, her family and her clothes. She meets her boy-friend on the corner and frequents cheap taverns. One night when she is particularly disgusted with her family, she drinks too much with her friend and forgets her inhibitions. As Wile would say, the alcohol fertilized her wild oats. The next morning finds her a frightened young woman but she covers her terror with boldness. If she escapes pregnancy, she is lucky for the moment, but she will never be quite the same again.

You have Johns and Sams and Marys and Emmas in your town.

What are you and your community doing for the Sams and Emmas? Are you giving them outlets for their adolescent needs that are satisfying and safe? Do you have recreational centers that are clean and free? Are your parks adequately supervised? Do you have well-lighted streets? Do you have a few women policemen who can keep an eye on minors, particularly in questionable resorts? Are your teachers sympathetic with youth and its problems? Is your curriculum varied enough to fit individual needs? Do you lend a helping hand to youth when he blunders or do you disown him and cast him off when he most needs you?

We have considered sex as it may influence the personality of the child and affect the personality of youth. Let us examine the effect of sex on the adult personality. Most adults are married, have been married or will be married. According to *Statistical Abstracts of the United States,* in 1939 60 per cent of the males in this country over 15 years old and 61.1 per cent of the females over 15 years old were married. An additional 4.6 per cent of the males and 11.1 per cent of the females were widowed. Each decade since 1890 has seen the number of marriages per 1,000 population increase. These figures indicate that marriage is a part of the American way of life.

Marriage is no cure for maladjustments. It may even intensify these if unwholesome attitudes toward sex are present. An adult's attitude toward sex is determined by all of his experiences; for although the sex life of the individual person is merely one aspect of his total personality, it is closely interwoven with the other aspects. At its best, sex is a constructive social force; and at its worst, it cripples both the body and the spirit.

Psychologist Lewis Terman recently made a study of factors that might have a predictive value for marital happiness. His data were assembled by means of questionnaires from 792 middle-class couples in California whose anonymity was preserved. One of his most important findings was that satisfactory sexual mating was not the prime requirement for marital happiness. Some of the factors having a predictive value for a successful marriage were: happy parents, a happy childhood, firm but not harsh disci-

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pline, parents who were frank about sex, a happy temperament and virginity at marriage.

Marriage and sex cannot function successfully on a purely physiologic or genital level. Sex and marriage must not leave the man or woman with a feeling of frustration but give them a keener sense of human values and help each of them to fulfil his aspirations and satisfy his emotional needs.

According to Snow, "the transition from married companionship to parenthood is even more vital and influential in the lives of the married pair than the original union." With the birth of child there comes a new common bond, a new responsibility and a new interest in life. Spoiled children come from homes without enough love and their irritability, wilfulness and offensive behavior is often indicative of their feeling of insecurity. One of the worst kinds of a parent is the one who uses the child as a substitute love object.

There are many men and women who never marry. What outlets or compensations are open to them? They will do well if they avoid activities which are sexually stimulating. They should avoid phantasy. Many get vicarious satisfaction through identifying themselves with the Don Juans and Cleopatras found in books, on the screen and on the stage. Such an imaginative device increases sex tensions and encourages the withdrawal from real companionship which further isolates them. Thus a circular response is set up.

Many unmarried people sublimate their sex impulses into creative work. They write, paint, compose musical selections, garden, plan other people's houses or even do creative cookery. Many find a substitute for sex and marriage in a vocation or in home making. Homes, however, are not limited to a man and his wife. Many women with a sincere love of children become nurses, teachers and social workers. A task fitted to the person's interests and abilities may prove a wholesome and satisfying outlet. A vocation and a hobby may so completely fill the person's life and consume his energy that he has neither time nor reason to feel frustrated or unhappy.

What part does sexual aberrations and social diseases play in the drama of personality building? A sex crime is invariably a manifestation of maladjustment. It is a symptom and should be treated as such in rehabilitating the offender. There is much clinical evidence that shows that homosexual persons are neither psychotic nor feebleminded but defeated and frustrated. It is necessary to be sensitive to the causes of these undesirable behavior patterns and to do something to eradicate them.

Much is said of venereal disease today. Perhaps we needed to learn that syphilis and gonorrhea are not incurable diseases if they are treated in their earlier stages. Perhaps we needed to realize that syphilis and gonorrhea are social diseases and should be placed on a strictly public health level. And yet we cannot fail to recognize that there is no real reason for progressive people to feel that no talk, either public or private, is complete without syphilis and gonorrhea being mentioned. Certainly, these diseases and their treatment have no real place in the sex education of children. With youth, the prevention of these diseases rather than the terrible disintegration they may bring, should be stressed.

What effect does the menopause have on personality? In many instances neither the man nor the woman experiences any difficulty. In some cases there is emotional, mental and physical disturbance, but even then a capable and understanding physician and understanding and sensible friends can do much to help the person recover his health and his perspective. Love and affection may continue long after the full power of sex has been lost.

SULFANILAMIDE AND GAS GANGRENE

By means of a dye with a special affinity for the cells of the blood which help combat disease, two Canadian investigators have been able to shed some light on how sulfanilamide and its derivatives produce the beneficial effects obtained from their use in treating gas gangrene. Reporting in *War Medicine*, Benjamin Kropp and Dorothy G. Smith, Kingston, Ontario, Canada, explain that almost all investigators of the microscopic picture of gas gangrene infection have observed the absence of a typical inflammatory reaction at or near the site of the wound. This inflammatory reaction is indicative of the accumulation of large amounts of blood necessary to combat the invading organisms. They say that there seems to be almost general agreement that the mobilization of blood cells which have phagocytic properties, i. e., the ability to engulf the invading germs, is delayed or inhibited in the presence of the poison of the gas gangrene organism.

Sterile doses of the dye, trypan blue, were injected under the skin of two groups of guinea pigs which had been infected with gas gangrene. Sulfanilamide had been introduced into the wounds in one of the groups of infected animals. Particles of the injected dye were taken up or absorbed by the blood cells the investigators were seeking to study and thus were stained so that they could be observed in contrast to other cells. From their studies of the location of these stained cells in the area of infection, the two Canadians concluded that the poison or toxin of the gas gangrene germ rapidly destroys the connective tissue beneath the skin and the phagocytic cells present in that tissue and that the organisms and poison spread chiefly along connective tissue planes. The poison of the gas gangrene germ inhibits or prevents the accumulation and phagocytic activities of the cells at the wound site. Sulfanilamide partially overcomes the inhibitory action of the infection on the migration of the various cells of the connective tissues toward the seat of the infection and also the inhibitory action of the infection on the phagocytic ability of certain cells.

Questions and Answers

(Continued from page 927)

and in some persons can be trained to a remarkable degree, as for example in professional perfume or tobacco testers or in wine or coffee tasters. Thus, the so-called sense of taste is really a complex affair and is difficult to test or evaluate accurately. Most commonly used tests for acuity of taste or smell are employed to aid in the clinical determination of various nervous lesions in the pathways or centers of the brain concerned with these senses.

The taste buds start to differentiate in the developing human embryo about the third month at about the same time the nerves going to them start to develop also. It is interesting that in the adult when the nerve fibers going to the taste buds are cut or destroyed, the corresponding taste buds disappear also and reappear only when the nerve fibers have regenerated in these regions. Anatomically, these taste buds are located over a greater region of the mouth and over nearly all of the upper surface of the tongue in the baby at the time of birth, while in the adult there are no taste buds in the large upper middle surface of the tongue. The center of taste seems to shift with growth of the person from a region near the tip of the tongue to a position farther back and on the sides of the tongue. While it is said that a baby responds to taste in those regions of the upper surface of the tongue where no sensation of taste can be elicited in the adult, it is doubtful if the sense of taste is any more acute in the young. Studies on young babies are contradictory as to just what if any taste sensations can be aroused, some claiming that only strong stimuli elicit responses in the first few weeks after birth. By the eighth or ninth month the baby seems to enjoy experimenting with various tastes from then on. The pleasantness or unpleasantness of the taste of various substances seems to be, in large part at least, a matter of learning and previous experience with various food substances and such judgments do not always agree at first with adult standards. Since few, if any, foods stimulate just one of the primary taste sensations, and since a baby cannot tell us in words what it feels, there must be considerable doubt cast on most observations tending to show a comparison of sensitivity of taste in the baby with that of an adult.

The taste buds are modified epithelium cells of the surface lining of the tongue and mouth, and the presence of greater numbers of these buds in the new born has been explained on the basis of an evolutionary hang-over from more primitive types where there is a wider distribution of taste buds in the mouth and tongue regions than in the adult human. However, the taste organs are much simplier than some of the other special sense organs, such as the eye, and do not seem to undergo any marked physiologic change in function with age, as does the eye.

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"Doctor, what do you do to bad little girls who bite sugar almonds?"

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

The Children's Speech Clinic: IV

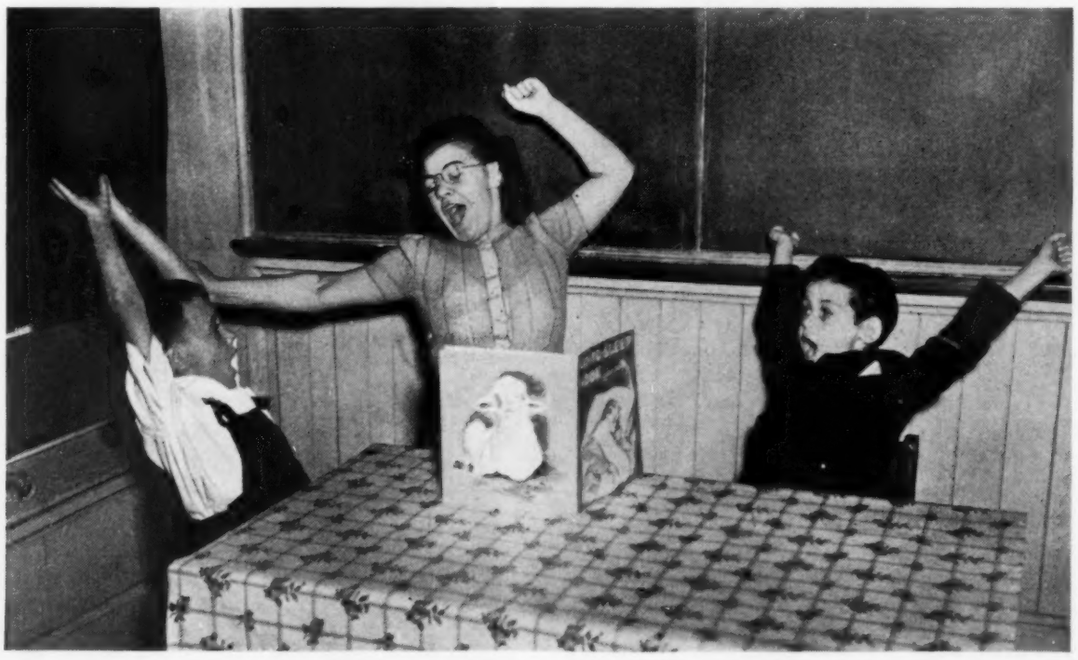
By RUTH E. BECKEY

DOES YOUR CHILD need help? It may be comforting to know that approximately 40 per cent of the children who have stuttering symptoms recover as general maturation takes place. However, it is difficult to determine who is a real stutterer and will need special guidance to overcome his speech handicap. As the child grows older, stuttering will become more firmly established, and more difficult to eradicate. Therefore, it is of the utmost importance for you to do all you can immediately to give your child the proper physical, mental and environmental happiness to insure a more adequate recovery.

Stuttering is really not a speech defect; instead, it is a symptom frequently indicating some emotional maladjustment. Since stuttering interferes with the person's ability to communicate words, one may conclude that the defect occurs in the speech apparatus. However, on examination of the stutterer's lips, teeth, tongue and larynx, nothing can usually be found to contribute to the difficulty of the production of the words. The child may be able to say "b" at one time, but not at other times. This would indicate that the organic mechanism was not instrumental in causing the disturbance.

Several factors seem to be particularly characteristic of stutterers. For instance, more boys tend to stutter than do girls. Secondly, intelligence seems to have no particular relationship to this group of speech-defective children. As a whole, the stutterers show intelligence as normal as any group of normally-speaking children. Moreover, stuttering, unlike other speech defects, has rather definite periods for its onset. Speech hesitations or blockings may begin when the child starts to talk, when he starts to school, or when he starts adolescence. At these particular times, various emotional adjustments are being made. Sometimes, a particularly nervous or sensitive child cannot make the social adaptations adequately, and the result may be stuttering.

When is your child a stutterer? Does he block (complete inability to say a word)? Does he repeat the beginning of a word, as "cc-cat," before he can say all of the word? Does he make faces as he talks?



Yawning and stretching are both excellent exercises for helping the child relax. Here, the clinician has just finished reading a go-to-sleep story. More effectiveness is obtained through dramatization.

Does he talk too fast, or in jerky rhythm? All of these symptoms may be evidenced as the child learns to talk, since the nervous speech mechanism matures slowly. However, if many hesitations or repititions occur, seriously handicapping communication, you may conclude that your child is a real stutterer and needs your sympathetic and understanding cooperation.

You may ask, "Why does my child stutter when my friend's little girl does not?" That is a question that many speech specialists have been trying to answer for years. Numerous researches have been made to ascertain the real causes for stuttering, but no outstanding agreement has been reached by speech authorities. Among the various reasons given for the onset of the stuttering symptoms are brain damage, disease, inferiority complex, severe shock, inability to adjust to a group, habit, imitation, heredity and slips of the tongue. Some researchers believed that boys were more likely to stutter than girls, since they had a desire to say undesirable words in a disapproving society. The conflict, it was believed, caused the beginning of stuttering.

Some believe that severe frights and shocks will start hesitant speech. One small girl began stuttering shortly after a violent earthquake. Another child developed slow, faltering speech when severely frightened by a burning rag, accidently caught in her hair. However, this shock followed a severe seige of whooping cough, which undoubtedly had weakened the child's nervous system. Probably, no one factor is responsible for stuttering speech. One hard fall, an earthquake, whooping cough, measles, or bad home environment may not be individually responsible for the onset of the nervous speech. But, if the child had measles, plus a hard fall, plus a sudden shock, and plus quarrelsome parents, he may stutter. It's the last straw that "breaks the camel's back."

For centuries, many attempts have been made to cure stuttering. At one time, even a piece of the tongue was clipped off, in the hope that speech could be freed. Unusual appliances, also, were often attached to the tongue to aid the speaker. The much-quoted Demosthenes tried to free his speech by talking with pebbles in his mouth. At the present time, many methods are advocated for the stutterer to use. Some therapies seem to be more effective and lasting than others. No one set of rules will apply to every person. Talking slowly may help one, and not another. In general, each stutterer must develop a proper attitude toward his difficulty; and he must develop a "bag of tricks" that he may carry with him for any speech emergency.

The treatment of the young stutterer is different from that of the stuttering adult. In most cases, the child is not yet conscious of his speech deficiency. Consequently, it is important to "treat" you, the parent, and his teachers, so that the child may not be allowed to develop any undue anxiety about his condition. Certain procedures must be followed, and certain procedures must be avoided if your child is to conquer his stumbling speech before deep-seated psychologic maladjustments take place.

Suggestions for helping your young child to overcome his stuttering may be grouped under four headings: physical, psychologic, sociologic, and re-educational. The approach, also, should be made in much this same order.

Physical Approach

To help the child physically, all disturbing physical defects and infections must be removed if possible. Such conditions will often irritate and produce extreme nervousness, conducive to hesitating speech.

(1) General health may be improved by providing the proper diet.

(2) Regular periods for relaxation and rest should be provided during the day. Short periods of rest immediately after the two meals are helpful.

(3) The stuttering child should have more sleep than the average child.

(4) No strenuous play should be permitted. The child must not get too tired or excited at any time. All attempts to speak should be delayed until an attitude of calm is attained.

Psychologic Approach

Proper mental attitudes should be developed. All issues must be faced.

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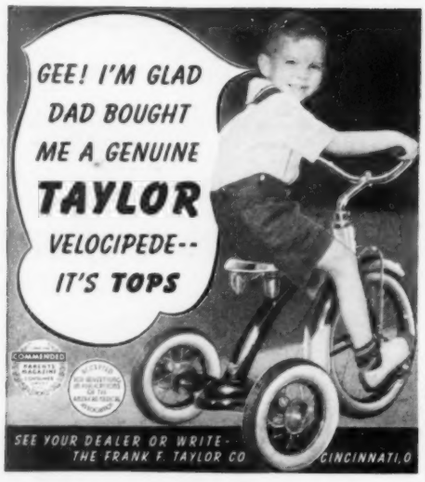

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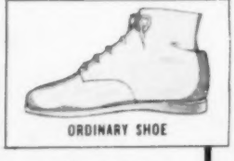
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Face speech situations with courage. Obedience, perseverance, concentration, deliberation, organization and calmness are characteristics favorable for the stutterer to cultivate. He may say to himself, "I will never hurry again. I have lots of time to talk."

(1) Build the child's confidence by helping him develop new skills. Whenever possible, praise him in his attempts. Often the stutterer lacks confidence, and a word of encouragement is helpful.

(2) Avoid forcing the stuttering child to compete with others in games and school work. He may be brilliant, but his emotional nature will not allow for the tension caused by the strong competition.

(3) All anxiety and fear in regard to speaking must be avoided. If the child once notices that his speech is inadequate, or that he is causing unpleasant reactions among his friends, he will begin to fear talking. This will gradually make stuttering worse and more difficult to handle.

(4) Stuttering must be ignored by showing no emotional responses to the child's difficulty. After a severe stuttering spasm, you should divert his attentions so that he will have no time to become morbid over his speech failure.

(5) If the child is already much distressed over his inability to speak fluently, convince him that every one stutters some, now and then. If some one tells him that he stutters, he may say, "Sure I stutter. Every one does!"

(6) The child should be convinced that nothing is wrong with him. Show him that his speech organs are as good as yours. Talk to him to show him how to make the different sounds. Sometimes, thinking about how to say the sound will help.

Sociologic Approach

The home, school and community environment may be contributing its share to your child's unhappiness and feeling of inferiority, which often intensify the stuttering condition. Closely examine the environment to determine what undesirable elements should be eliminated.

(1) Your home must be free of tension-producing situations. Conflicts between parents often produce an atmosphere that is disturbing to the child. It is not enough to conceal disturbances: they must be eradicated. Even though you do not talk about financial problems, you are worried; your child senses this.

(2) Children in the schoolroom, in the family, or in the neighborhood should be asked to cooperate in overlooking the young stutterer's unsuccessful attempts to speak. They should learn to continue work without noticing the unfortunate speaker.

(3) Be an example of calm living. If you have slow actions and speech, the child may tend to slow down. Check yourself for any unfavorable habits which may be contributing to your child's feeling of insecurity.

(4) Do not discuss your child's speech problems in his presence. This will only make him self conscious and fearful of his speech.

(5) The teacher must cooperate to remove tension-producing stimuli at school. Her manners and speech must not upset the sensitive, stuttering child.

Re-Educational Approach

After the physical condition has been checked and attempts have been made to improve the general health; after the environment has been examined and all unfavorable irritable factors have been removed or corrected; and after the right mental attitude has been established toward his inadequacy, the child is ready to do some direct speech work.

(1) Some general rules to be followed are: do not speak rapidly at any time, do not speak when excited, and do not speak when extremely tired.

(2) Talk and act more. Use the telephone, take part in conversations, oral recitations and public speaking, go shopping, and make introductions. The acting helps the child to think less of himself and his speaking. Each speech activity mastered will tend to give the speaker more confidence. One should begin with the easier speaking situations first, and then proceed to the more difficult assignments as the success warrants.

(3) During the evening story hour, you may be able to help the child to talk more fluently without attracting particular attention to his difficulty. For instance, you may teach him how to relax by

playing games with him. Play that you are a scarecrow. The rain makes your head droop over and then the sun comes, making your head come up again and back. Or you could play Raggedy Ann. As you play these relaxing games, you should combine speech with them. It's usually easy for the stutterer to talk slowly and easily if relaxed.

(4) After this introduction, rhymes may be read in slow tempo, pausing between short phrases for breath. The child may repeat them after you in the same way. He must be sure to take sufficient breath before making any speech attempt—then gradually he may let out the sound easily on the outpouring breath. If he can think of sighing as he talks, he will have less difficulty. All first words of sentences should be attacked easily, as these are the words that the children usually fear.

(5) Try having the child read poems with you. A stutterer is often able to read successfully with some one else, and this will give him a sense of successful achievement. At least, he will know how it feels to talk without hesitations.

With sympathetic understanding and cooperation, you may do much in the home toward helping the stuttering child to overcome his handicap before psychologic maladjustments have occurred.

BENZEDRINE SULFATE

Some medical men have believed that the abolition or reduction of the sense of fatigue after the use of amphetamine (benzedrine) sulfate is solely a subjective phenomenon, i. e., perceived by the affected person, but not apparent to another person. However, investigations conducted by Ernst Simonson, Norbert Enzer and S. S. Blankstein, Milwaukee, indicate that the drug has a direct action on the central nervous system by increasing its excitability or receptivity, they report in *War Medicine*.

To provide a means of determining the effect of the drug on fatigue of the central nervous system in such a way that the results could not be influenced by any effort of the subject, they used the fusion frequency of flicker method.

"The fusion frequency of flicker is the rate of successive stimuli (flashes of light) which is necessary just to produce complete fusion and the same effect as continuous illumination," the investigators explain. "Thus the fusion frequency is the highest number of impulses the retinocortical system (retina, visual pathways and visual centers) can perceive in a unit of time . . ."

The instrument used consisted of a rotator arrangement devised so the beam of light from an electric bulb was interrupted by a rotating disk with four identical openings. The subject was seated with his head placed on a chin rest so that the distance from the illuminated area to the eye was kept constantly at 1 meter. The speed of the rotator was increased until fusion occurred, i. e., the rotating disk no longer could be seen. The fusion was then measured by means of a stop watch and a revolution counter. A total of 62 experiments were performed with 6 subjects, 24 of them with amphetamine and 38 as controls. It should be emphasized in connection with the report of the three men that repeated warnings have been issued regarding the hazards involved in the use of amphetamine sulfate without competent medical supervision.

INFANTILE PARALYSIS

The possibility that vitamin B deficiency may be a predisposing cause of infantile paralysis is suggested by Karen Helms in the *Medical Journal of Australia*. From an extensive review of the literature, she says she finds indirect evidence of this possibility in the fact that the disease tends to occur with greater frequency when the demands for vitamin B_1 are heavy, as in childhood, pregnancy, substandard nutrition and after excessive muscular exercise in children, or young adults, when infantile paralysis is prevalent. She also points out that infantile paralysis seems to have increased since 1880 and that modern milling processes which remove much of vitamin B_1 and B_2 were adopted in 1870.

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Shall She Chew Gum?

By DOROTHY V. WHIPPLE

"MOMMIE, why can't I chew gum? Barbara does, and so does Jimmy. I think you are just mean not to let me," and Anne unfolded her napkin with little jerks and twists which emphasized her annoyance at the supervision of grown-ups in general and her own parents in particular.

"I thought we had settled that question," I said as I looked quickly at my husband to see if he had risen to the bait. He was quietly beginning his soup with no apparent interest in the topic. I dreaded this subject. Why couldn't one's children accept a few edicts laid down by their parents and not have to question everything?

I picked up my soup spoon.

"Maybe you *think* you settled it," went on Anne peevishly, "but every day I have to say 'No, thanks, I don't like gum.' "

"But why do you say that?" I interrupted. "And would you mind passing the crackers."

Anne passed the crackers but with so much irritation that several spilled off the plate.

"Oh, I'm sorry," she apologized with a little show of contrition for her manner, but all the pent-up irritation was back in her next remark.

"You don't think I'd say 'my mother won't let me chew gum' do you? They sure would think I was a sissy."

"But Anne," broke in her father, "don't you children ever admit to each other that you have parents and that those parents have some control over you?"

"Sure we do, Daddy. You don't seem to understand. Sometimes I'm just bursting with pride—like the time Mommie explained to the Parent-Teacher Association what she meant by a Grade A lunch and how she and I had worked out that scheme we have about my lunch."

Sadie came in in response to my call and began removing the empty soup dishes.

Tim smiled over at me and there's no denying I glowed under this frank praise, but my pleasant glow was short-lived as Anne went on.

"But this gum business is different, it makes me ashamed—it's so unreasonable. I don't want them

"Every day I have to say 'No, thanks, I don't like gum.' "

to know my mother is so silly." Anne spoke with vehemence.

"Looks like you are on the carpet, Jane," said Tim, "let's hear your arguments about gum chewing."

"Can I hope for some help from you, Tim, to get this across to this upstart of ours?"

"I think I had better be neutral," he replied as he picked up the carving knife and fork.

"Daddy, will you be judge?" asked Anne, "I don't see how anybody could think mother's arguments are sensible."

"Could I have an outside piece, please Daddy, and make it two potatoes."

"All right, I'll be judge if it's all right with mother. To tell the truth, I don't feel very excited about the matter one way or the other. It amazes me that you girls can work up so much steam about such a simple thing as gum."

"There is a lot of dish gravy here, would you like some, Anne?"

"Yes, thanks," she said as she passed him her plate, "on the meat, please."

"All right, Tim, you be judge." I went on, "I must admit I do feel rather strongly about gum chewing."

"Shall I start by giving you the arguments," broke in Anne. Her irritation was almost gone as she warmed up to the idea of a spirited argument.

"Do you know them?" I asked in surprise.

"Of course I know them, and I know the answers to them, too."

"Maybe you had better let me state my objections first and then we will hear your 'answers' as you call them," I started cautiously.

"I must begin, however, by saying that there is nothing instinctively bad in chewing gum. My dislike of the habit is entirely on esthetic grounds, and first because it is so unpleasant to see people chawing away with their mouths wide open . . ."

"That's just it," interrupted Anne, "'chawing' as you put it, is not a part of chewing gum. I wouldn't chew it any differently than I'm eating this lamb. You don't stop me from eating because some people eat badly. Why must you stop me from chewing gum because some people do it badly?"

"Most people who chew gum," I went on, "do it in an unpleasant way and therefore whenever you think of gum chewing these unlovely pictures come into your mind."

"That's not fair," said Anne, "Barbara, Jimmy, and Duke are not unlovely."

"Well, let's leave that point and go to the next," I went on.

"Gum is dirty—people chew it awhile, then take it out of their mouths and leave it around. Sometimes they even go back and pick it up and chew it again—let's hope they always get their own back again!"

"Some kids pass apples and lollipops around, and some people like Daddy over there (pointing with much vigor and with a mischievous grin) leave half-eaten apples on the living-room table."

Sadie was bringing in the dessert now, and as she put Anne's baked apple in front of her Anne asked softly, "Any chocolate cookies left, Sadie?"

"Now, now, *you're* not fair this time, missy, that was an accident," said Tim soothingly.

"Well, anyway, leaving gum around doesn't have to be a part of chewing it," said Anne. "What's next, Mommie?"

"Don't you think it's rude to be chewing in front of other people without offering them something to eat, too?" I was very much aware of the fact that my arguments were not carrying as much weight with Anne as they did with me.

"Yes, I do think it's mean not to share candy or gum, but the kids do share gum. Gee whizz, don't I have to refuse it almost every day!" Anne's vehemence underscored the sincerity of this remark.

"Have you anything else to raise against gum?" asked Anne.

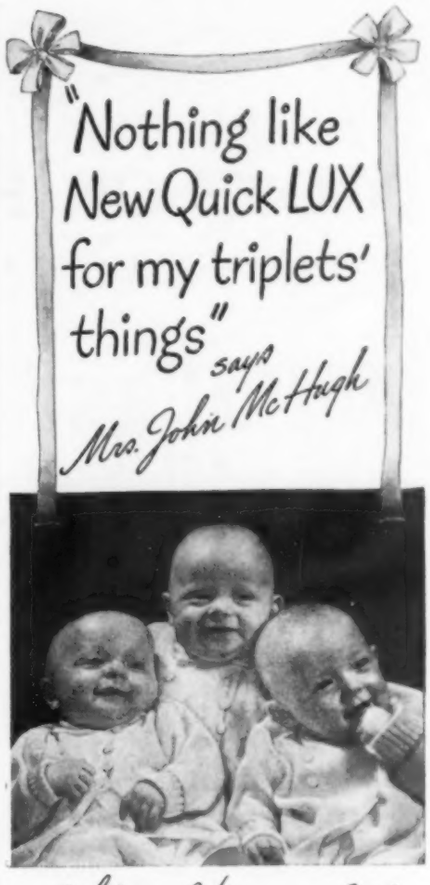
"I guess the last point and one you can't get behind is that I just don't like it," I ended weakly.

"Now, Daddy," said Anne slowly and deliberately as she took her fourth cookie, "what about it? Do mother's arguments make sense to you?"

"The last one does," began Tim, "it's apparent that mother doesn't like gum chewing, and I believe it's also apparent that her daughter does."

"Well, I believe you're right in that profound observation," said Anne with glee in her eye, "and

(Continued on page 943)



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BOOKS ON HEALTH

The Medical Aspect of Boxing

By E. Jokl, M.D. Cloth-paper. Price $4.50. Pp. 251. Illustrated. Pretoria, South Africa: J. L. Van Schaik, Ltd., 1941.

The author of this book believes in the total abolition of boxing, whether it is amateur or professional. He states that the few advantages claimed for boxing are far offset by the harmful results, chief of which are the hidden brain injuries caused by hard punches to the head.

Many persons in the United States have advocated removing boxing from the curriculum of our schools and colleges during the past few years, but no one has made the same extensive study of the medical side of boxing as has this author. Not only is he the head of the Department of Physical Education of a large South African college, and Consultant on the Medical Aspect of Physical Education for the South African Defense Force, but he is also the author of many excellent articles on the effect of athletics on the human body.

The book contains numerous case histories of boxers who have been injured in the ring, together with the author's comments or the comments of some eminent doctor who examined the boxer. It covers the entire field of boxing injuries, including the effects of knockout blows to the chin, as well as the effects of kidney punches, heart punches, and blows to the solar plexus.

One of the most interesting sections of the book is that dealing with the question of "punchdrunkeness." A boxer normally receives more blows to the head than to the body. The author points out that these blows are bound to cause some injury, usually an impairment of the central nervous system. This results in amnesia, indistinct speech, unsteadiness in gait, and what is commonly called "walking on his heels."

The author states that former heavyweight boxing champion of the world, Gene Tunney, who is now a Lt. Commander in the Navy in charge of Navy athletics, retired from the ring because he feared becoming punch drunk. This information is found in Tunney's autobiography which the author quotes. It appears that while training for the second Dempsey fight, Tunney bumped his temple against the top of his sparring partner's head, and then received a hard punch on the jaw. Tunney states he lost all consciousness and recollection of what he was doing, but later found out that he had knocked out the sparring partner soon thereafter, and then boxed three rounds with another. Tunney did not remember anything until the next morning, and for three days thereafter could not remember the names of his most intimate acquaintances.

"After returning to normal" writes Tunney, "I decided that any sport in which such accidents could occur was dangerous. I realized I had a concussion. The first seed of retirement was sown then. The possibility of becoming punch drunk haunted me for weeks."

It will be interesting to observe what effect this episode will have on the boxing program of the Navy under Tunney. The author states in a footnote at the end of the volume that one of his chief reasons for writing it was to effect the elimination of boxing from the physical training program of the armed forces of South Africa, and more especially of the Air Force. Will the United States Army and Navy agree with the author?

The answer has apparently already been given. The new training manual of the Army on Sports will contain a section on boxing, and the Navy under Tunney is also planning to go into boxing in an extended way.

Most boxing authorities do not accept the conclusions of the author. Amateur boxing coaches who have taught scientific boxing believe that under proper control boxing should definitely be taught. They point out that lack of training, absence of a scientific coach, and failure to have a medical advisor present, are the reasons for injuries, rather than boxing itself. The old time boxing coach taught boxing by tossing two boys together in a ring and letting them fight, explaining the punches while they did so. The modern boxing coach never allows his pupils to go into a ring and box until they have had many weeks of training on the fundamentals of the various blows that make up boxing. When they are finally allowed to go into a ring and actually box, it is always under strict supervision.

Whether or not the conclusions of the author are acceptable, this thought-provoking book is one that should be read by medical men, boxers, trainers, boxing referees and persons interested in the field of physical education. For the first time there is made available a comprehensive study of boxing from a medical point of view, with case histories that are extremely informative, and written in language that the layman can understand.

E. K. Gubin.

Teaching Health and Safety in Elementary Grades

By Willard Walter Patty, Ph.D. Cloth. Price, $2.50. Pp. 371. Illustrated. New York: Prentice-Hall, Inc., 1940.

This book is a useful manual of health teaching and safety teaching in elementary grades. The first three chapters are devoted to the health of the teacher, dealing with administrative matters which have often been left to chance instead of executive planning. Every one may not wholly agree with the author's recommendations for somewhat extensive community paternalism toward teachers, but his emphasis on the importance of teachers' health as a prerequisite for student health and for health teaching cannot be minimized.

The book contains chapters on the challenge of health and safety teaching, preparations for health teaching, outcomes of elementary

health education, the psychology of learning health and safety, teaching health through health service and teaching health through physical education, demonstration, oral illustration, visual aids, projects and problems, dramatizations, life situations, activities, integration or correlation. There are also chapters on safety at home and at school, on streets and highways and in recreation, and one on health and safety supervision duties of the teachers. An appendix contains a list of courses of study analyzed by the author. There is a good index, and the book is well printed, well made, and fairly well illustrated.

Physicians will differ with the author's distinction between the "medical examination" and the "physical examination." In the latter, he includes orthopedic defects and defects of the feet among "those phases of physical development and conditions not ordinarily included by physicians and dentists in the health examination." This classification is symptomatic of a tendency among physical educators to establish a so-called physical examination as distinguished from a medical examination. If this physical examination is to include such highly specialized medical examinations as those involved in the evaluation of orthopedic defects, it might with equal logic be extended to cover examinations of the heart, lungs, nose and throat, for which obviously even the best trained nonmedical physical educators cannot be adequately prepared.

The book is exceptionally well organized, clearly written, and comprehensive. It should be of great service to teachers, supervisors and administrators as well as in teachers' training institutions.

W. W. Bauer, M.D.

World Famous Chefs' Cook Book

By Irene H. Taylor. Pp. 637 and appendix. Price, $3.50. Winnetka, Ill.: Otto Naylor Corp., 1941.

Many persons have attempted to collect favorite recipes of persons and places renowned for good and unusual foods. Few have done it so well as Ford Naylor and his associates; in fact, it is doubtful if such a compilation can be repeated because of world conditions.

We are told that five years were spent collecting the material and testing the recipes for this volume. Here have been gathered rare, old and secret recipes used by chefs of famous hotels, steamships, railroads, and in private homes of Europe, the United States and Canada. The book also contains some attractive pictures and stories of the sources of the various cookeries.

In addition, there is included a special, significant chapter concerning the latest information on food values and diets. It seems to be authoritative and simple to understand and follow.

Irene Hume Taylor deserves special mention for her fine arrangement of the recipes and for the double indexes which will be appreciated by every cook.

For those who like good dishes and for those who like to prepare or order fine foods, this World Famous Chefs' Cook Book will be a treat.

Anna Mantel Fishbein.

Borrowed Children

By Mrs. St. Loe Strachey. Cloth. Price 75 cents. Pp. 149. New York: The Commonwealth Fund, 1940.

This small volume tells what happened to some of the 730,000 school children who were evacuated from their homes in England during the early part of September 1939, to localities that were at that time considered safe from attack by air. The emotional maladjustments attendant on the dislocation of the lives of these evacuated children are analyzed and some of the practical methods of mental hygiene applied under the guidance of expert advice are described. As stated on the fly leaf of the cover: "The aim of this book is to give intelligent people a picture of the first months of evacuation, the problems that arose, and the way they were met."

J. W. Halloway.

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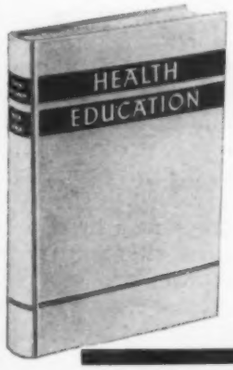


By the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the Cooperation of Advisory Committees.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago

Emotional Factors in Reading Disabilities

The stress which is placed on reading skill in both the home and the school constitutes a basis for emotional difficulties

By EDWARD M. SOLES

WHETHER SOME emotional factor is the cause of a reading disability, or the reading disability is the cause of the emotional factor, complete analysis will determine; but there is no doubt that a reading disability contains potentialities for emotional instability.

A seventh grade pupil, using a social studies text as a basis for corrective work, came across this sentence: "Phidias made beautiful figures of women with a grace and splendor. . . ." He read it: "Hideous made beautiful figures of women with a grouch and splinter. . . ." Had this incident taken place in a class room it is easy to imagine what a splendid background would have been provided for an unfavorable emotional reaction.

The child first learns to read. When he has developed adequate skill he reads to learn. Thus, reading ability is the basis of the educative process, although the sound motion picture, so-called comic strip, picture magazines, radio and illustrated text books seem well on the way toward making reading ability as obsolete as computing devices have made arithmetical ability.

The stress which is placed on reading skill by both the school and the home constitutes a splendid springboard for emotional difficulty. Our clinical experience presents three facts: first, by the time a child with a reading disability has reached the third grade his problem has become serious enough to have something done about it; second, the cases are predominantly boys; and third, there is some emotional factor involved. The predominance of boys may be due to the fact that more attention seems to be given to them, probably because their emotional reactions take a more violent form of expression than in the case of girls.

The emotional factors in reading disabilities may be considered as having their bases in the school situation and in the home situation. In the school situation, first experiences in developing reading skills may be under a teacher whom the child dislikes. Often the antagonism is mutual due to a clash of personalities, since teachers are human and have likes and dislikes. Sometimes prejudice is born of a previous unpleasant experience with another child of the same family and the teacher anticipates trouble. It is a sad commentary on the emotional maturity of the adult that experience has shown it best to give the child another teacher because it is futile to try to change the teacher's attitude.

Many times a child suffers unpleasant and painful experiences in the early years of his schooling

Reading before the class and taking part in school plays are painful experiences for the child with a reading disability.

which condition him against reading. The use of such deadly weapons as sarcasm, ridicule and humiliation, which were not ruled out with corporal punishment, may leave a deeper scar on the emotions than any physical punishment might leave on the flesh.

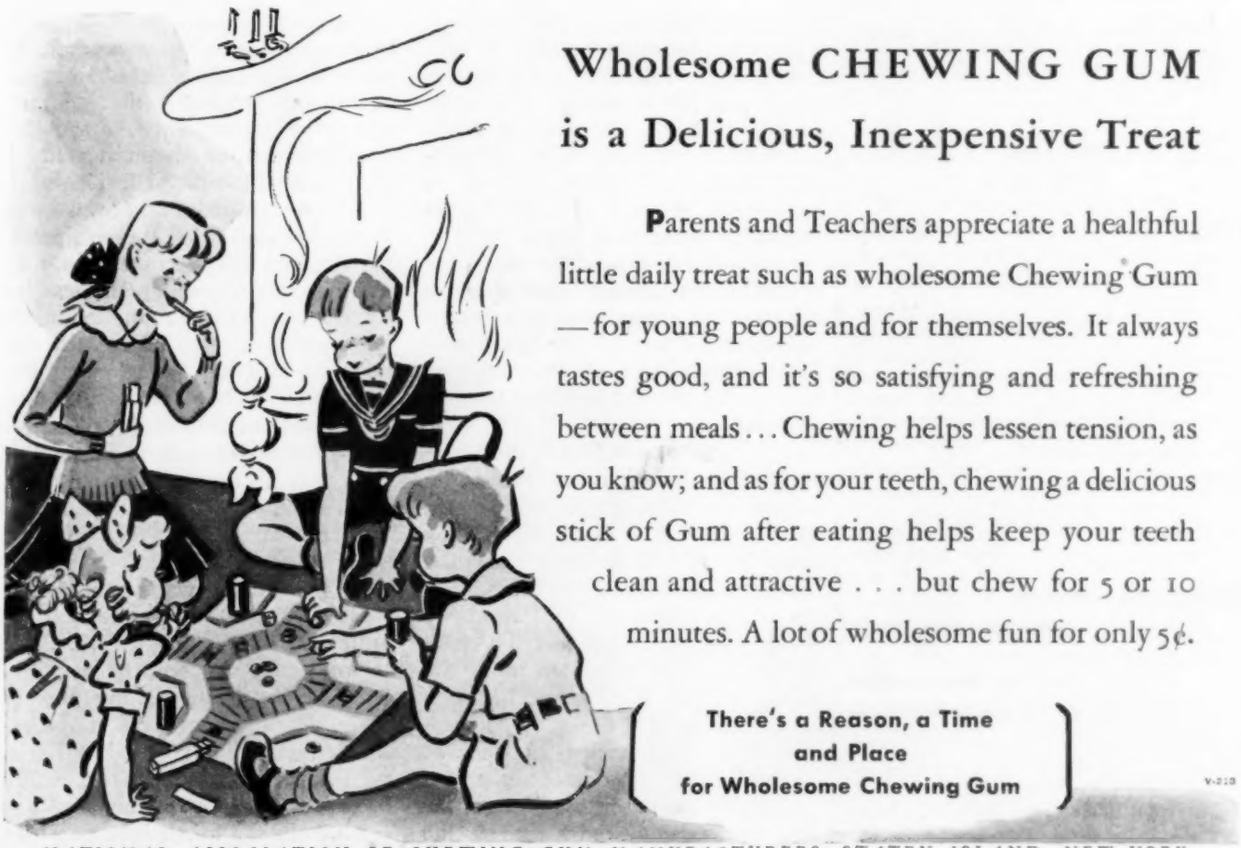
"She says I'm cock-eyed," was the statement one patient attributed to his teacher. If the teacher had to comment on the condition of the child's eyes, she might have said, "You are strabismic," but then there might have been trouble ahead like that of the boy whose teacher told him he was a "disturbing element," only to have an irate parent demand an apology for calling her son a "scurvy elephant." The use of these oral weapons threatens the child's sense of security and often produces a "Timid Soul" that goes through school fearful of asking questions or answering them lest he be ridiculed. Another illustration is the case of a child who had learned that e-n-o-u-g-h was pronounced "eenuf" and applied his learning to the word "d-o-u-g-h-n-u-t," calling it "dufnut." The tone of the teacher's comment and the laughter of the class stung the boy to the quick and gave him a mental attitude against that teacher in particular and school work in general.

Other painful experiences which pupils with a reading disability encounter are reading before the class and taking part in plays. Through splendid school cooperation one clinic case has made rapid gains by being allowed to read from his newly assigned seat at the back of the room. Of course, the problem ahead was to condition him to advancement down the aisle. A 14 year old boy with a third grade reading ability was called on to read a difficult paragraph before the whole school as part of the initiation ceremony for new students. Fortunately, for the boy, the student who was master of ceremonies didn't have much better luck when he tried to read the passage.

These school experiences cause the child to associate failure with the group. He may develop a feeling of inferiority which transfers from the reading situation to the entire school curriculum. Different children will respond differently to these experiences. One becomes an introvert, defeated and socially maladjusted. Another compensates for his insecurity by becoming proficient in delinquency. Some children referred to the clinic as behavior problems prove to have the roots of their misconduct in a reading disability.

Those of you who have read "The Yearling" will recall the episode where the boy says to his father, "Why are some animals so bold and others so skeer'd?" The father replies, "It depends on how young they are skeer'd." Therein lies a principle which might be applied in child training.

Some reading disability cases may be due to inadequate teaching methods and materials. Each method creates errors which have to be overcome by applying another method in corrective work. But the school is not responsible for all the failures in the school situation. There is the pupil who is the victim of frequent changes in resi-



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dence and the one who through illness suffers from the lack of continuity of instruction.

The state of confusion of a child with a reading handicap is exemplified by the boy who when asked how he liked school replied, "I like everything but the guessing game."

Many of the emotional factors associated with reading difficulty may be traced to the home situation. Parental pride and ambition often result in an over emphasis on reading progress. Keeping up with the Joneses depends on Billy's mastery of reading skill. This concern over reading ability does not take into consideration mental maturity and individual differences in rate of learning. Often a child's emotional stability is sacrificed on the altar of family pride. Failure to measure up to parental expectations affects the child's sense of security and creates a state of anxiety which constitutes a blocking of the learning process.

Sibling rivalry presents another factor causing emotional difficulty. The first evidence of reading difficulty often comes when a brother or sister enters school and makes rapid progress. Unfavorable comparison threatens the child's position in the family constellation.

So-called inherited disabilities are many times merely the result of conditioning. A child is given a splendid opportunity to rationalize his disability when he hears a parent say, "I had a terrible time trying to learn to read."

Children, all too often, are given a mental set against some teacher because of disparaging remarks overheard at home. This prejudice acts unfavorably on the rapport which should exist between teacher and learner.

The bane of a teacher's existence is the well-meaning parent who insists on helping the child with his lessons. The more difficulty a child has with his school work, the more vehemently does the parent try to supplement the teacher's work with the result that the child becomes more confused and the parent as well as the child becomes more emotionally upset. The emotional factor as well as the lack of understanding of corrective methods makes the parent a poor teacher and handicaps the work of the remedial program.

Dick, a third grade boy, was referred to the clinic because of his pugnacity both at home and in school. Routine testing revealed a serious reading handicap. An ambitious parent had falsified Dick's age and entered him in the first grade at the age of 4½ years. Sibling rivalry entered the picture when a younger brother was given more attention at home and made more rapid progress in school. At this point Dick started picking fights at school and maltreating his small brother at home. Eye tests revealed that after fifteen minutes of reading the blind spots enlarged to such an extent that binocular vision was greatly interfered with. The therapy recommended was alternate occlusion of vision by use of a black eye patch. A school mate remarked that Dick looked like a pirate. This boosted his self esteem, thus providing a favorable emotional reaction to the therapy. A remedial reading program was carried on with the eye treatment and soon there was a decided improvement in reading and a termination of the disciplinary problem. The mother, encouraged by this improvement, promised Dick a substantial reward if he should be promoted to the fourth grade. Conditional promotion was granted by the school. This resulted in a disagreement between the parents, since the father decided that the conditional promotion removed the obligation of the reward. The mother's emotional instability transferred to the boy and he was soon back to his original level of reading ability. Another factor which interferred with progress was the mother's determination to help with the teaching and her requirement that Dick read to her for twenty minutes each night before he could tune in to his favorite radio thriller. This was a climax to interference, since reading was now associated with punishment.

In the school situation the first step toward preventive and corrective measures should be an appraisal of the child's readiness to undertake the reading program. Such factors as mental age, physiologic condition of eyes and ears, handedness, motor coordination as well as other special skills which are measured in a reading readiness test should be taken into consideration. Such a preventive procedure

will do much toward forestalling failure which would result in adverse emotional reactions.

Even with a reading readiness check-up there will be some children who will develop disabilities during the early years of reading experience because of the emotional factors mentioned above. Trained teachers will recognize the symptoms when they first appear and will apply diagnostic and corrective work. When the teacher determines the pupil's ability level and starts him to work at that level, the element of success provides an impetus which results in rapid progress.

For the child with a special disability the "A," "B," "C" system of marking should be replaced by some sort of report on progress and attitude.

Children are very quick to react to the emotional state of the teacher. A "Blue Monday" for her is sure to be a bad day for the class. Mental hygiene and psychiatric service should be available to help the teacher solve her conflicts but undoubtedly $50 more on the monthly pay check would eliminate most of her difficulties.

Therapy to remove the emotional factors based on the home situation is not so easy to prescribe. Emotional reactions in parents are so deeply imbedded in basic instincts that it is practically impossible for them to treat the child's problem objectively. There is still much to be done in educating parents in correct emotional attitudes toward child problems, although Child Guidance Clinics as well as independent psychiatrists and psychologists are doing much toward overcoming the prejudice against seeking professional aid for emotional difficulties.

Shall She Chew Gum?

(Continued from page 937)

is her daughter to be denied the joys of chewing gum because her mother does not like it?"

"Jane, you agreed I was to be judge and it does seem to me you two have come to an impasse—Anne likes it—you don't—and that's about how it stands."

"I have to admit it looks a little like that to me, too," I said.

"You know Anne," went on Tim, "there is one article of food that just sends cold shivers up my back. It's all I can do to sit at the table when someone else eats it."

"Yes, I know, scrambled brains," said Anne, "but what's that to do with gum?"

"Just this," went on Tim, "your mother is very fond of scrambled brains, but she never has it on the table when I am here because she knows how I feel about it."

"We have it often when you're away, though," said Anne.

"That's just it—and that's my solution for the gum chewing."

"You mean I may chew gum when mother isn't around?" asked Anne and she was ready to hurrah.

"Wait a minute—I haven't given any permission—that's my suggestion. What does mother say?"

"I must admit it's a little hard for me to take, although it does seem as though the only strong argument against it is just that I don't like it," I admitted grudgingly.

"Do you agree to Daddy's plan then?"

"All right," I agreed, "provided you don't chaw, don't stick half-chewed gum around and do offer to share with your friends, and do it where I do not have to see you."

"Three cheers!" yelled Anne.

"But just remember, Anne," I went on, "there are lots of people who feel the way I do about it and try to keep your gum chewing to times when you are with your own crowd."

"Yes, mother dear, I know you're not the only old fogey in the world. I'll remember."

Anne jumped up from the table, gave me an affectionate pat and a quick kiss on the cheek and ran off.

Tim put his arm around my shoulder as we left the dining room.

"It's funny how important these silly little things are sometimes, isn't it?" he asked. "I don't believe she'll abuse the privilege, though."

And she didn't.

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Medical News

OF THE MONTH

The Search for Quinine Substitutes

Hope for success in the search for effective substitutes for quinine and atabrine in the treatment of malaria, a quest which has been spurred by the possibility that the present war may shut off supplies of quinine to this country, is further brightened by a report in *The Journal of the American Medical Association* by L. T. Coggeshall and John Maier, New York, and C. A. Best, Ancon, Canal Zone. They say that investigations show that promin and sulfadiazine, two recent derivatives of sulfanilamide, unrelated to quinine or atabrine, possess considerable activity against experimental and human malaria. Their findings, they believe, justify further study of the antimalarial possibilities of the two drugs and their related compounds.

The Stomachs of Chronic Alcoholics

Visual examination by means of a gastroscope of the stomachs of 100 men with chronic alcoholism who had consumed an average of 2.8 pints of alcohol daily for an average of more than twenty years revealed that the stomachs of 55 per cent were essentially normal, Seymour Gray and Rudolf Schindler, Chicago, report in *The Journal of the American Medical Association.*

It should be borne in mind that the studies of the two men were confined to the visual effects on the mucous membrane of the stomach resulting from long continued consumption of large amounts of alcohol and that other effects on the body were not involved in the study.

The findings of the two investigators shed light on a question about which there has been a considerable difference of opinion in the medical world for many years. As they point out in their report, it has not been demonstrated conclusively heretofore that the use of alcohol over a long period can produce chronic gastritis (inflammation of the mucous membrane of the stomach). The part that alcohol plays in producing acute gastritis has been known since 1833.

From their studies of the 100 men, the authors conclude: "Although the prolonged use of alcohol seems to produce chronic gastritis in some patients and has no effect whatever on the stomachs of others, the reason for this discrimination is still unknown.

"No correlation was observed between the incidence and severity of the gastritis and the duration of the alcoholism, the amount of alcohol drunk, the abuse of nicotine, dental infection or vitamin deficiency."

Envelop Method of Treating Burns

An envelop method of treating burns and wounds, introduced by Surgeon Lieutenant Commander John Bunyan of the British navy, is described in *The Journal of the American Medical Association* by its regular London, England, correspondent. Commander Bunyan has developed a water-tight silk envelop which is placed over the involved portion of the body.

"The envelop is provided with an inlet and an outlet, so that a lesion of any part may be irrigated by inserting a glass nozzle," the correspondent reports. "A simple adhesive seal is fixed to the proximal [toward the body] end of the envelop at the factory, so that by removing the protective gauze one produces a water-tight seal by lightly pressing the adhesive to the limb and covering with an adhesive bandage."

It is pointed out that the great value of envelop irrigation is that in no case treated by it, with or without cleansing in the operating room, has anything more than mild infection occurred.

New Mastoid Operation Technic

A new procedure in the operation for acute mastoiditis (inflammation of the mastoid) wherein sulfanilamide or sulfathiazole crystals are placed in the cavity after the operation and the wound then tightly closed instead of the usual procedure of leaving therein a rubber drainage tube, is reported in *The Journal of the American Medical Association* by George S. Livingston, Chicago.

"Blanket Grafts" of Skin

A method of skin grafting which they term "blanket graft," by which they prepared a graft with a total area of 176 square inches, believed by them to be the largest ever reported in medical literature, is described by H. O. McPheeters and Harvey Nelson, Minneapolis, in *The Journal of the American Medical Association.*

The two men point out that the ordinary methods of making skin grafts have definite shortcomings in the resurfacing of large areas involving a complete loss of skin, such as from an entire thigh or leg. They say that as a rule only an exceptionally experienced physician can get a strip of skin more than 2 inches wide at one time, and that also there frequently is the technical difficulty of cutting grafts of uniform thickness. Their method, which overcomes most of the objections to other technics, involves the use of an instrument called the Padgett dermatome. This consists of a drum with a surface 4 by 7 inches with a blade of razor steel set close to the surface which can be adjusted by means of calibrated screws to any thickness from the drum face.

"In this way," the Minneapolis men report, "the thinnest razor graft can be cut or the full thickness of the skin can be taken if it is so desired. . . . A careful search of the literature makes no mention of what we have termed the 'blanket graft.' We believe that we are the first to make use of and report this idea. It is particularly adapted to and used in covering an extensive granulating area such as an entire thigh, a large part of the back or body elsewhere."